AN EXAMINATION OF NATIVE AND IMMIGRANT STUDENTS' SOCIAL NETWORKING USING THE COLLEGE SEARCH AND SELECTION PROCESS

by

Bruce Carlton Neimeyer

BS, Allegheny College, 1989

MA, University of Pittsburgh, 1993

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This dissertation was presented

by

Bruce Carlton Neimeyer

It was defended on

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and approved by

Dr. John Weidman, Professor, Administrative and Policy Studies

Dr. Charlene Trovato, Clinical Associate Professor, Administrative and Policy Studies

Dr. Erik Ness, Assistant Professor, Administrative and Policy Studies

Dissertation Director: Dr. James Jacob, Visiting Assistant Professor, Administrative and Policy Studies

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This dissertation explores the use of formal and informal networks through cyber- and traditional communication methods in the college search and selection process by native and immigrant students to examine various postulates and propositions of social capital theory. In addition, the analysis of cybernetworks used by disadvantaged, college bound immigrant students in the United States furthers our understanding of the equalization of opportunity and/or replication of the social divide found with more traditional social networks.

The research methods consisted of archival data analysis with chat room transcripts; six on-line focus groups of 21 first year students from The City University of New York (CUNY); and one on-line survey distributed to 9,240 CUNY first year students. SPSS and NVivo qualitative analytical software were used to conduct frequency, statistical significance, correlation and linear relationships analyses.

These results confirm the use of a greater variety of formal and informal networks by students. No preference for either the use of formal or informal networks was found among all respondents. However, immigrant students found that formal networks such as guidance counselors, admissions counselors, high school teacher and current college students provided the most useful information compared to their informal networks. Friends as an informal network were the only exception. These findings support the strength-of-weak-ties and strength-of strong-

ties postulates. Immigrants show a greater variety of network usage especially through cyber-communication methods. Perhaps as a result, lower SES immigrant students were found to enroll more in four-year CUNY colleges compared to lower SES native students. Lower/middle SES immigrants that used email–mainly with friends– and static college search Web sites had a greater perception than natives of the same SES that their degree would result in their improved SES a finding that challenges the social capital structure postulate. The evidence of the Internets ability to provide equalization of opportunity supports the argument for its more open access in order to address the lack of information among U.S. immigrants.

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The path that we each take to reach our individual goals is always uniquely our own. The journey to get there allows us to re-establish, create and develop our networks. My journey toward the completion of this dissertation, a life goal, has provided me such opportunities and made it more rewarding and possible.

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1.0 CHAPTER

1.1 INTRODUCTION

This study determines the role of traditional and cyber-communication methods used with formal (weak-ties) and informal (strong-ties) networks by immigrants and natives during their college search and selection process. It uses the results to further explain how the embedded resources accessed by immigrant students through their cybernetworks exert influence on the outcome of their college attendance/potential social mobility as well as their perspective of future mobility.

The United States continues to be a country of immigrant growth (Gray, Rolph, & Melamid, 1996; Mehta & Ali, 2003; Staniec & Hagy, 2002). According to the U.S. Census Bureau Current Population Survey, there are 37.9 million legal and illegal immigrants in the United States with 10.3 million who arrived from 2000 to 2007, the highest number of immigrants in a seven-year period in U.S. history. One in eight U.S. residents are immigrants compared to 1 in 13 in 1990 and 1 in 21 in 1970. According to the Population Reference Bureau's analysis of the 2005 American Community Survey there were 15.7 million children in immigrant families including both children born inside and outside of the United States (21% of all children in the US) and 3.1 million foreign-born. If current immigration levels continue, it is estimated that 30% of the nation's school population in 2015 will be children living in immigrant families. A greater percentage of immigrant children are living in families where no parent has a high school diploma (27%), when compared to children in U.S.-born families (8 %) (Casey,

2007). In fact, it is the world leader in receiving migrants representing 20.12%[1] or 1,299,000 individuals of the world's migrant population in 2005 (Hossain, 2007). The 1990 U.S. Census indicates that 15% of all children in the United States are immigrant children or children of immigrant parents and more specifically 59% of Latino-American and 90% of Asian American children are from first or second generation families (M Zhou, 1997). U.S. Census Data also indicates the annual rate of immigration during the 1990s through to the year 2001 outpaces the immigration population growth experienced in the 1980s and more than doubles that of the 1970s. This immigration boom mirrors the type of immigration growth experienced in the United States between 1920 and 1930.)[2] There are important differences from the immigration growth of the decade between 1920 and 1930 especially in the composition of the recent immigrants. By March 2007, the top sending countries were Mexico (19.8%), China, India, Philippines and Vietnam (Camarota, 2007). Immigrants, partially due to fewer years of schooling, have lower median incomes than natives. The annual median earnings of immigrants who work full-time and year-round is approximately 77% that of natives and for the most recent immigrants, median earnings are only 61% that of natives (Camarota, 2007). The Development, Relief and Education for Alien Minors Act of 2003 (S.1545)—also called "The DREAM Act"—if finally passed, would provide access to higher education for undocumented immigrant students in the United States and is evidence that to some degree the U.S. society still sees higher education as the vehicle for strengthening the country via its human capital at a time when immigration is growing.

Immigrant populations currently arriving in the United States have various socioeconomic backgrounds, but primarily represent poorer socioeconomic backgrounds (Kao,

[1] http://www.nytimes.com/ref/world/20070622_CAPEVERDE_GRAPHIC.html#.
[2] http://www.census.gov/statab/hist/HS-08.pdf.

2004). Immigrants in general have been shown to experience high rates of social and physical isolation and health and work-related problems and have limited English skills. These characteristics, as well as numerous other characteristics, result in economic, cultural and social discrimination (Lopez, Scribner, & Mahitivanichcha, 2001). Also, as a result of the U.S. Immigration policy since 1965 that gives priority to family reunification, immigrants are admitted without any requirements for education or specific skills (Erisman & Looney, 2007). As a result, educational attainment among immigrants has declined in comparison with the native-born population. More specifically, Erisman and Looney (2007) found in 2005 that Latin Americans made up two-thirds of the immigrants in 2005 that were 18–24 or of college age and only 59% of those young immigrants were high school graduates and only 20% had attended at least some college. More generally, this discrimination combined with the immigration patterns and policy effects has contributed to the lower college attendance of immigrants. Therefore, the United States faces a large percentage of college bound students who will possibly have less opportunity for upward economic mobility.

The study and theory of social capital serves as a lens through which an individual's actions and their consequences not only for the individual, but his/her group and therefore the greater society has been viewed and described. More specifically, social capital theorists, using the concept of social networks, have explored students educational outcomes (Kao, 2004; M. J. White & Glick, 2000) and specifically higher educational choice (Ceja, 2001; McDonough, 1997; Roderick et al., 2008; Staniec & Hagy, 2002) by student characteristics. Within this research two issues have surfaced. The first is the argument; what constitutes social capital and how is it measured (Smith, 1993). The second is the theory's ability to go beyond the explanation of the individual action and to the more meso- and macro- level of analysis (Portes, 1998). Both

issues make it problematic to understand whether there are signs of decline, stabilization, or growth of social capital in the United States (Coleman, 1988, 1994; Lin, 2001a; Paxton, 1999). The present study considers the possible changes in U.S. social capital with the addition of cybernetworks. The event I use in this dissertation is the college choice process. It is important to understand the addition of cybernetworks in order to continue exploring new social networks and how they are being used by the actors in U.S. society to enrich their capital. More specifically this dissertation explores the use and rating of cybernetworks compared to other, more traditional forms of social networks used and the ways in which students connect with those networks in the process of searching and selecting a college by immigrant and native students across socioeconomic groups assists in our understanding and description of social capital theory.

1.2 PURPOSE OF THE STUDY

There are two purposes of this study. The first is to fill in the gaps of college search literature which has explored various forms of formal and informal networks but has done so either separately or not in relation to one another. In addition, it attempts to find possible new formal and informal networks used by and important to students in the college search and selection process. Finally, it has not explored fully the various cyber-methods of communication; instant messaging (IM), chat, blogging, email, static Web sites and on-line social networking such as Facebook.com along with traditional communication methods; in-person, phone, and mail in relation to their use and usefulness ratings by college bound immigrant and native students with their formal and informal networks during the college search and selection process. The findings will fill in these gaps in the body of college search literature and will provide practical solutions

for better assisting students and in particular immigrant students in the college search and selection process.

The second purpose of the study is to examine the propositions and postulates developed on social capital in relation to immigrant and native student's use of cybernetworks in their college search process as a case study to situate cybernetworks into the social capital theory. The findings will look to support or refute these theories and hypotheses on social capital which have been developed on the analysis of traditional in-person relationships and void of cybernetwork considerations.

1.3 IMPORTANCE OF THE STUDY

This study is important because it studies cybernetwork use by immigrants in their college search and selection process to address three objectives. First, it addresses several research design problems in the current college search literature. It will also incorporate both the use of formal (college admissions counselors, guidance counselors, high school teachers) and informal (mother, father, siblings, friends) networks of its research which much of the literature considers separately. It will make the use of cybernetworks as a research focus rather than discussing it as an unexpected research finding or a part of a more complex and therefore confounding study on students search and selection process. In addition, it will add to the research that has been conducted regarding these networks which has been inconclusive (*College Search and the Millennial Generation*, 2007; Roderick et al., 2008; Social Networks and Their Implications for Higher Education," 2008). Second, with many for-profit companies eager to use the Internet's college resources for their gain as well as many other developments on the web that are beginning to control and require access to information in it, this research's will explore how the

college search information currently on the web is used by a disadvantaged group; immigrants to improve their access to better college search information because of the current equalizing opportunities inherent in the current free structure of the Internet. Finally, it will incorporate into the social capital theory the consideration of cybernetworks as a new form of networks to either support or refute the current postulates and propositions associated with it. The following will address each of these more specifically.

My research will fill address several issues related to current college search literature. Research on college choice has analyzed both formal and informal social networks either directly or indirectly, but either fails to look at both types of networks or when it does, often fails to include cybernetworks. For example, Espiritu's (1982) research discussed various types of formal advice social networks (admissions counselors, current students) as moderately important to students in the college selection process but lacks analysis of the informal, its role in the decision process and how it relates to the formal networks, their information and levels of trust. The consideration of both formal and informal networks is important for this study. Social network theory concerns itself with both of these forms as important considerations to understanding the whole network and information that flows through it. As a result, the present study will further this conversation and seek to understand which type of resources are viewed by prospective students as more important and why.

Next, my study will add to the body of college search and selection literature to provide more conclusive and complete evidence for the use of cyber-and traditional communication methods with formal and informal networks in the college selection process. Roderick et al., (2008, p. 124) noted in their research on low SES urban students from Chicago, IL, "though many students in our qualitative study talked about looking up information about colleges and

universities on-line, we found very little evidence that students were using resources such as these to help guide their college search." This research dismisses cybernetworks because of its statistically low presence on students search and decision to attend college. Therefore, they concluded that its influence was not significant either. However, a recent Eduventures, Inc. survey indicated that current trends in high school students' use of on-line cybernetworks as sources have increased over the past few years and 80% of the college bound students who responded to this survey indicated that their college search started on-line (Ashburn, 2007). Therefore, it concluded that the increase in students' use of cybernetworks makes it the fasted growing resource used by college bound students in that same time period (*College Search and the Millennial Generation*, 2007). In addition, the Nielson On-line survey was cited in a recent session entitled, *Social Networks and Their Implications for Higher Education* stating that the three largest social networking cites (Myspace, Facebook, Classmates) had a total of 93,426,000 members worldwide ("Social Networks and Their Implications for Higher Education," 2008). Research by King, Kobayashi, and Bigler (1986) considers factors such as state of student residence, intended major of the student, year in high school in which process of college choosing began, source of information about the college, most important source of information about the college, evaluation of the sources of information about the college and evaluation of the campus visit and the admissions office, but still indicates inconclusive findings about the usefulness of certain formal or informal social networks by students in their consideration of colleges. For example, their study found college faculty to be useful formal resources however others (Knight & Johnson, 1981) have reported them to be very important especially those, "who expressed a genuine interest in a prospective student and demonstrated competence and knowledge in his/her field" (King et al., 1986 p. 100). In light of the inconclusive findings

regarding the use of social networking in the college search and selection process it is important to make this the central focus of research. As the central focus, this study will give an in-depth view of cybernetworks by making them the focus of the research rather than one of many objectives or as an aside to the main research objective. In will consider with difference between native and immigrant students, with whom they are interacting with in relation to the various cybernetworks and how their use and ratings compare to the more traditional network communication methods such as mail, phone and in-person communication. In addition, as the variety cybernetwork options continue to grow at a rapid rate and access to them also becomes increasingly available, the timing of this study will attempt to expand the college search research which has historically only considered a limited number of these resources and/or the question of use rather than their usefulness. Therefore, this study will provide a more complete picture of cybernetworks and their use in the college search and selection process.

Second, many cybernetworks are primarily created to provide free access to information regarding the college selection process but a trend is evolving where they are bought by for-profit institutions that place restrictions on access. In light of this development, a greater understanding of how immigrants are participating in information exchange through the most rapidly developing form of social networks; cybernetworks can help to guide the development, control and policies regarding a medium at a time when affirmative action college admissions policies are under attack, various types of minorities are on the rise in U.S. society, and negative sentiments toward immigrants seem to be increasing as evidenced by the growing desire to find and deport "illegal immigrants." This research will produce timely information to rethink current trends such as for-profit corporations like Hobson's, Incorporated buying and controlling previously unbiased on-line information sources or college search cybernetworks like

CollegeConfidential.com that may lead to replicating traditional network hierarchy structures that result in inequality of access to social capital during the college selection process ("Hobsons Acquires College Confidential," 2008; Neoform, 2008). This would move cybernetworks away from their existing equalizing opportunities due mainly to the ease and low cost of accessing them, the vast and easily accessible information they contain, and more importantly the lack of control over these resources by traditional authorities (Lin, Cook, & Burt, 2001b). The results would benefit colleges and other non-profit organizations focused on providing equal access to tools for the college admissions process (e.g., the National Association for College Admissions Counseling [NACAC], colleges and universities) through their adoption and development of technology.

Finally, the research will add to Lin's (2001a) hypothesis that the consideration of cybernetworks as an emerging form of instrumental[3] and/or expressive[4] action in U.S. social networks could further the theoretical discussion on the decline, maintenance or rise in social capital and contribute to the overall development of social capital theory. It will use the current postulates and propositions of social capital to accomplish this.

In sum, the present study's central focus of the constantly evolving cybernetworks use and ratings in the college search and selection process and consideration for the currently large volume of various SES immigrant disadvantaged students who are of college going age currently in the United States will further our understanding of the equalization of opportunity and/or replication of the social divide found with more traditional social networks to add to the college search literature and social capital theory as well as inform the future technology development. As Coleman (1994) and Lin (2001a) suggest, this type of research is critical to a broader

[3] Instrumental action is the individual's action to gain resources.
[4] Expressive action is individual's action to maintain resources. Maintaining resources is the primary motivation for action; therefore, expressive action is the primary form of action

understanding of how individuals satisfy their interests in a social system which helps to better shape social network and social capital theory.

1.4 GUIDING RESEARCH QUESTIONS AND HYPOTHESES

This study will examine the following guiding research questions:

1. How do native and immigrant student's use traditional and cyber-communication methods with their formal and informal networks in the college search and selection process?
2. Is there evidence that cybernetworks alter the college attendance patterns of immigrant students because of their contribution to the student's social capital? In addition, do immigrant students that use cybernetworks in their college search and selection process have a better perception that their obtained degree will improve their SES status?

In order to answer the first research question, this study will test several hypotheses. The first hypothesis is that students communicate (cyber- compared to traditional methods) differently with formal and informal networks in their college search and selection process. Cybernetworks occur in an environment that is characteristically different than the traditional network environment where there are significant resources, various information channels, immediate exchanges between individuals, and possibly a reduction of power by those in more advantaged social positions due to place of origin, class and race (Lin, 2001a). As such, it is possible to conceive that cybernetworks could result in an equalization of opportunity in access to social networks as suggested by Lin. Furthermore, education researchers have found that both formal and informal traditional networks are viewed as important to providing students information/resources for their decision to attend college, therefore it will be essential to

understand if the cyber-versions, which appear to be on the rise in number and in use, are being used in similar or different ways by native and immigrant college bound students (King et al., 1986). I will test the first hypothesis by comparing the *use* of cyber- and traditional methods of network communication student's use with their formal and informal networks. My second hypothesis is that formal and informal cybernetworks are essential networks for the college selection process. In order to test this hypothesis I will explore the relationship between the student's *rating* of formal and informal networks using both cyber- and traditional communication methods during the search and selection process. My third hypothesis is that immigrant and native students differ in their use of cyber- and traditional communication with their formal and informal networks during the college search and selection process. The analyses from the first and second hypotheses will be used and the responses will be separated by the student's place of origin (native or immigrant) for comparison purposes.

The hypothesis for my second research question is that the uses of cybernetworks by immigrants have implications for college choice and social mobility. Most research on social networks indicates that immigrants and minorities tend to have weak or no networks that can help inform and ultimately improve their options for college attendance (Staniec & Hagy, 2002). However, Lin (2001a) suggests that current research lacks a fuller consideration of current development of cybernetworks which may alter our understanding of how individuals access various forms of mobilized social networks in order to build their social capital. The 2003 United States Census Bureau's Current Population Survey also provides some statistical support for Lin's assertion to consider the cyber. The survey found that 25.6% of the total population interviewed had the Internet in their house ("Current Population Survey," 2003). The ethnic group which indicated the highest use of the Internet were Hawaiian/Pacific Islanders (31%)

followed by American Indian, Alaskan Natives (18.2%). The remaining ethnic groups in percentage order were Blacks (15%), Whites (13.2%), Asians (11.3%) and Hispanics (10.9%) ("Current Population Survey," 2003). Of the total respondents 82.7% were native to the United States and the remainders were immigrants from other countries. Although much has changed in the U.S. population since 2003 and possibly the percentages of racial groups who use the Internet to seek information as well, this historical statistic indicates that some historically disadvantaged minority groups considered to be less "connected" were accessing the Internet in greater numbers than non-minority groups begging the questions; who were they connecting with and what information were they gaining that may or may not improve their situation? In addition, due to immigrant policy changes in 1965 that gave priority to family reunification and therefore, admitted individuals to the United States without educational or specific skill requirements, educational attainment among immigrants has declined (Erisman & Looney, 2007). In fact, in 2005 only 63% of immigrants had no more than a high school diploma compared to 46% of the native U.S. population and yet, despite being so disadvantaged are more likely than the overall U.S. population to have completed a bachelor's degree or higher (Erisman & Looney, 2007). Therefore, as disadvantaged minority groups have shown an increase in use of the Internet as a resource and are more successful in completing a bachelors degree than the native U.S. population, certainly, their networks are playing a role in these improved educational attainment outcomes. In fact, research has show how immigrant minorities have used their networking to improve educational attainment (Coleman, 1988). Another such instance where networks have proven to be useful is the college search and selection process which has implications for their educational attainment of the bachelor's degree and beyond. Therefore, to investigate the second research question, I will analyze the cyber- and traditional network use of immigrant students

compared to natives in their college selection process and its correlation with their choice to attend a two year or four year college. Further I will correlate their use of cybernetworks with their perspective of degree attainment and their improved SES (social mobility).

The postulates and propositions of social capital as proposed by Lin will be used to situate the findings of the research questions and hypotheses into the theory of social capital and how the inclusion of cybernetworks challenge and/or support these concepts.

1.5 DEFINITION OF TERMS

The following section will provide definitions to certain terms used in this research for clarity purposes and for any use of its findings compared to other research. The postulates and propositions of social capital are taken directly from Nan Lin's summary in, *Social Capital: a Theory of Social Structure and Action* (2001a, pp. 75-76)

Immigrant students: Students born in a country other than the United States as well as those defined as "one-and-a-half" generation students. The latter group, first defined by Ruben Rumbaut (1994) to describe children who straddle the old and new world and are neither fully a part of either. It is important to make this distinction as research has both combined and separated these populations. Research has found difference between native, second, one-and-a-half and first generation. These differences have been found in their physical, psychological, socialization processes in the family, the school, society at large and their orientation toward their homeland (M Zhou, 1997, p. 65). However, for the purposes of this study I will be including the one-and-a-half generation students into the immigrant student category.

Native students: Students born in the United States including first- and second-generation students in the states.

Cybernetworks: Social networks in cyberspace and specifically on the Internet which transcend time and space in relation to the social capital they offer (Lin, 2001a, p. 212).When computer-mediated communication networks link people, institutions, and knowledge, they are computer-supported social networks (Wellman, 2007, p. 2031). Current examples of these cybernetworks are college Web sites, company owned college Web sites, MySpace, Facebook, Zeng, YouTube, LinkedIn, blogs, blog lines (blog aggregator), Twitter (micro blogging), Google and Yahoo groups, Ning Classroom 2.0, email communications, chat rooms, and more specifically those hosted by colleges.

Formal Network: These are networks that are weak-ties as defined by their role category. For the college search and selection process, these role categories would be guidance counselors, college admissions counselors, high school teacher, a professional in the field, athletic coach, religious person/leader, current college student.

Informal Network: These are the networks that are strong-ties as defined by their role category. For the college search and selection process, these role categories would be mother, father, sibling, other relatives, neighbors.

Traditional social networks: Social networks which have historically been considered in social capital theory that are two actors who are networking through other communication methods outside of the cyber- environment. For this study the traditional networks considered were phone, in-person meetings and mail/postal correspondence.

Structural postulate: Valued resources are embedded in social structures in which positions, authority, rules and occupants (agents) usually form pyramidal hierarchies in

terms of the distribution of valued resources, number of positions, level of authority, and number of occupants. The higher the level in the hierarchy, the greater the concentration of valued resources, the fewer the number of positions, the greater the command of authority, and the smaller the number of occupants.

Interaction postulate: Interactions usually occur among actors with similar or contiguous characteristics of resources and lifestyles – following the homophily principle. The greater the similarity of resource characteristics, the less effort required in interaction.

Network postulate: In social networks, directly and indirectly interacting actors carry varying types of resources. Some of these resources are in their personal possession (personal resources or human capital), but most of the resources are embedded in others with whom each actor is in contact, directly or indirectly, or they are embedded in structural positions each actor occupies or is in contact with.

Social Capital definition: These structurally embedded resources are social capital for the actors in networks.

Action postulate: Actors are motivated to either maintain or gain their resources in social actions – purposive actions. Action to maintain resources can be called expressive action, and action to gain resources can be called instrumental action. Maintaining resources is the primary motivation for action; therefore, expressive action is the primary form of action.

Social-capital Proposition: The success of action is positively associated with social capital.

Strength-of-position Proposition: The better the position of origin, the more likely the actor will access and use better social capital.

Strength-of-strong-tie Proposition: The stronger the tie, the more likely the social capital accessed will positively affect the success of expressive action.

Strength-of-weak-tie Proposition: The weaker the tie, the more likely ego will have access to better social capital for instrumental action.

Strength-of-location Proposition: The closer individuals are to a bridge in a network, the better social capital they will access for instrumental action.

Location-by-position Proposition: The strength of a location (proximity to a bridge) for instrumental action is contingent on the resource differential across the bridge.

Social-resources Proposition: Social resources (e.g., sources accessed in social networks) exert influence on the outcome of an instrumental action (e.g., status attained).

Structural contingency Proposition: The networking (tie and location) effects are constrained by the hierarchical structure for actors located near or at the top and bottom of the hierarchy.

1.6 SUMMARY

This chapter provides the basic introduction to the research with an explanation of the general purpose and importance for investigating immigrant and native students' use of cybernetworks in the college search and selection process. These issues are explored through the research questions and hypotheses stated above. Definitions for important terms used in this dissertation are provided to assist the reader.

Several reasons for the purpose and importance of this study are covered in this first chapter. First, the changing immigrant population in the United States continues to decline in

relation to their educational attainment which has serious implications for the country if the traditional factors such as information about going to college are not addressed. In addition, because these immigrant students are from lower socioeconomic levels consideration of differences between and within socioeconomic ranges are important to understand. Finally, using social capital theory as a lens through which to explore this research will help to further develop and/or support its current postulates and propositions especially with the inclusion of cybernetworks. It will also add to the current literature on college search and selection, educational attainment and immigration social mobility literature. These current issues related to social capital theory and the research literatures are further explained in the next chapter.

2.0 CHAPTER

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

This section reviews the theoretical framework and related literature that this dissertation will use to interpret its findings.

First, I will review the theoretical aspects of social capital developed by Coleman, Granovetter and Lin and the three principle propositions most associated with the mobilization of social capital for attained status. Lin's (2001a, p. 55) theories on the aspects of social capital theory and principles for mobilized social capital guide my research as they are most relevant. The three aspects or major principles of social capital discussed are structure, interaction and action. The three propositions important for my research are the strength-of-position, the strength-of-strong- tie and the strength-of-weak-tie propositions. These propositions for the theory are reviewed as they link social capital to action and therefore can be tested by this research's analysis regarding student's use of social capital from their social networks and its implications for their college choice. Therefore, the major principles of social capital theory, structure, interaction and action as well as the propositions associated with mobilized social capital provide the lens through which this dissertation will consider the college search and selection event and the inclusion of cybernetworks.

The literature review covers relevant literature and findings in the research on cybernetworks, college selection research, educational attainment, and immigrants and immigration theory that will assist in the interpretation of these dissertation's findings.

2.1 THEORETICAL ASPECTS AND PRINCIPLE PROPOSITIONS OF SOCIAL CAPITAL THEORY

It should be stated that Lin's theory of social capital has been chosen for this research for several reasons. First, Lin's theory has built upon and or incorporated the classical capital theory of Bourdieu (1986), Coleman's (1994; Coleman & Hoffer, 1987; Coleman et al., 1997) social capital theory that defines it by the function it serves for a particular purpose and a particular actor, Granovetter's (1973, 1983) contribution of the weak-tie concept and Burt's (Burt, 1992) theory of structural holes. Second, Lin's theory uses the action aspect of social capital as its focus therefore; it is well suited for this dissertation's analysis of the action of college enrollment in relation to the use and usefulness of student's networks. Third, upon considering Coleman's assertion that social capital was on the decline in the US, introduced the notion to consider cybernetwork developments through the Internet and its possible implications for social capital theory and propositions.

The following section covers the development of the three basic aspects of social capital by social capital theorists. They are structure, interaction and action. This will provide the theoretical framework that allows me to focus on the resources embedded in one's social network (structure) and how access (interaction) and use (action) of such resources benefit the individual (Lin, 2001a). Next, I summarize Lin's assumptions on structure, interactions and actions as they introduce the postulates he associates with mobilized social capital that I will use to analyze how students mobilize their resources in their networks to achieve enrollment or improved SES.

First, I will review the concept of structure and interaction for social capital. According to Portes (1998, p. 3), the roots of social capital theory can be traced back to Pierre Bourdieu and

his definition of the concept which is derived from his "Provisional Notes" found in the *Actes de la Roecherche en Science Sociales* published in 1980 and gained greater recognition when published in his English language book on the sociology of education (Bourdieu, 1986). Bourdieu's concept of social capital focuses on the benefits accruing to an individual resulting from their participation in a group and the rational actor philosophy later used by Coleman (see footnote 5). Two main components of social capital, according to Bourdieu, are the actual social relationship itself (structure) which allows individuals to gain access (interaction) to the resources of their network and the amount and quality of those resources. Coleman (1988, p. 101) took this individual concept and applied it to the group or meso- level of analysis. He states that within individual relationships (structure) there is an accessing of resources (interaction). These resources can be combined with the resources of others relationships that belong to the group and as a result produce different system-level behavior and/or different outcomes for individuals. Coleman uses the High School and Beyond longitudinal survey to follow 30,000 high school sophomores in 1980, 1982, 1984 and 1986 to study this. His research concluded that a reduced risk of dropping out and enhanced probability for educational attainment could be tied to supportive and interpersonal relations in the family and community therefore showing how the cumulative resources of the group has can produce individual outcomes or improved educational attainment and low drop-out rates for the students that has direct implications for the group (e.g., the family) to which the student belongs (Coleman, 1988; Coleman & Hoffer, 1987). From this work Coleman further developed the argument that there are three forms of social capital. They are levels of trust as evidenced by obligations and expectations, information channels, and social norms and sanctions that promote the common good over self-interest (Dika & Singh, 2002, p. 33).

Coleman arrives at this understanding from a combination of sociological and economic perspectives. The sociological perspective indicates that the individual is socialized and his/her actions are governed by social norms and the social context in which the action occurs thereby being shaped, constrained and redirected (Coleman, 1988). The economist perspective states, the individual is seen as acting independently and is wholly self-interested (Coleman, 1988). Coleman's (1988) theory of social capital combines these two perspectives in a number of ways. First, he uses the principle of rational or purposive action[5] as the foundation in his theory. Then, he explains how other social content can account not only for the individual's actions in certain circumstances but also for the development of social organization. Next, social capital should be understood by its function. For example, how individuals act with others is facilitated by social structure aspects (e.g., friends/informal or high school guidance counselor/formal) that are associated with them.

In relation to the action aspect, Coleman states that social capital is also productive as it makes possible the achievement of certain end goals that in its absence would not be possible. However, Lin (2001a) objects to the functional social capital assertion by Coleman (1988) that "any social-structural resource that generates returns for an individual in a specific action and is defined by its function" (Lin, 2001a, p. 27). For Lin, this is problematic as, "social capital is identified only if it works; the potential causal explanation of social capital can be captured only by its effect; or whether it is an investment depends on the return for a specific individual in a specific action" (Lin, 2001a, p. 28).

In addition, social capital can be useful, useless and even harmful in facilitating certain actions. Finally, unlike other forms of capital, it is a part of the structure or the relationship

[5] Rational or purposive action is when the actor has control over certain resources and interests in certain events and his/her choices are affected by social norms, peer pressure, a desire to emulate leaders and other group influences (Coleman et al., 1997, p. 162).

between and among individuals and its value can be either economic or not. As Smith (1993, p. 52) suggests, Coleman's mix of sociological and economist perspectives combines these very different intellectual streams that accepts the principle of rational or purposive action, but connects this principle with particular social contexts (norms, information channels and closure) which he believes can account not only for the actions of individuals in particular contexts but also for the development of social organization.

Lin also states that capital theory can explain the individual and the larger group resource as well (Portes, 1998). However, Lin explains this through social relations. In these relationships there are embedded resources that benefit the individual and the group to which the individual belongs (Lin, 2001a). This is different than Coleman because social capital for Lin is an embedded relational asset and therefore not a material thing but the relationship (Dika & Singh, 2002). Goods may help to promote a relationship for an actor and his or her network, but it should not be considered as a form of social capital.

Another theorist, Granovetter (1985) uses the concept of "embeddedness" to deal with connecting the ideals of the rational actor and social structure. Granovetter finds a theoretical middle ground between the "undersocialized" and the "oversocialized" conceptions of the individual. He does so by examining the importance of trust and malfeasance in maintaining and disrupting market behavior while arguing for an "embeddedness" conceptualization. He writes,

> The embeddedness argument stresses . . . the role of concrete personal relations and structures (or "networks") of such relations in generating trust and discouraging malfeasance. …The embeddedness approach…threads its way between the oversocialized one of impersonal, institutional arrangements by following and analyzing concrete patterns of social relations. Unlike each alternative…it makes no sweeping (and

thus unlikely) predictions of universal order or disorder but rather assumes that the details of social structure will determine which is found. (p. 490)

Granovetter's goal was to retain the rational actor but superimpose social structure upon it. Coleman's was to retain the social structure but to bring in the rational actor. Both researchers were attempting to resolve the same issue simply stating from two different perspectives in order to arrive at the same place.

Additional social contexts or forms of social capital are added by Coleman that is important to the interaction and action aspects of social capital. These are the concept of norms, information channels and closure.

Coleman (1988) theorizes that norms both inhibit and facilitate certain action. Therefore, college attendance norms among immigrants might influence the students' attendance at a particular college (two-year vs. four-year). For example, an upper middle class immigrant student might choose to go to a local community college (two-year college) because her community or network values its students staying close by to remain connected to the culture of the community (e.g., Hasidic Jews). However, these college attendance norms might also facilitate the student actively pursuing enrollment at a college where they can move away from their home and community as they no longer share those same values.

In addition to norms, Coleman (1988) uses information channels as well as the concept of closure to also describe social networks. Information channels refer to the social relations that provide information and therefore facilitate action. They are maintained because of the information that they provide rather than because of the levels of trust, obligations and expectations that are associated in the network.

Levels of trust, obligations and expectations are a result of higher degrees of closure. Closure, according to Coleman (1988) is represented in the network when there is a high degree of social connection between all individuals involved in the network. He represents this by highlights this with the network of two school classmates. In one scenario two children in a school have parents who are also friends. In the other, the parents do not know one another. In the instance where there is a relationship between the parents of the children who are friends, there is a higher degree of closure. This greater degree of closure in the network allows for more trust, obligation and expectations to be imposed on the network therefore strengthening the social capital and how it facilitates action in the group. However, Lin develops the closure concept further. Closure and dense social relations in the network are not a requirement for social capital for Lin contrary to Bourdieu (1986) and Coleman (1988). Lin (2001a) asserts that Bourdieu (1986) promotes this concept because of his dominant class perspective of society and Coleman (1988) because of his view that closure in the network enhances trust, norms, and authority which help to ensure the network resources are mobilized. Lin asserts that density or closure are not an absolute in relation to social capital and uses Granovetter's (1973) work on weak ties[6] as evidence for this assertion. Lin's perspective therefore, does not ignore the usefulness of closed networks as a means by which a network can protect its resources but rather argues that it should not be considered a requirement for a social network to be considered social capital.

Having reviewed the developments associated with the basic aspects of structure, interaction and action in social capital, I will summarize Lin's assumptions related to them that also introduce his propositions of strength-of-position, strength-of-strong-ties and strength-of-

[6] Granovetter's (1973, 1983) work on this area of the social network theory shows how information can flow through such a relationship between individuals or an individual and its' group and the ability of the information shared to provide a gain or advantage for the individual if accessed and proven to be useful. Not only does the individual gain but the group connected to that individual gains because of the addition of this resource/information held by one of its members.

weak-ties that are associated with mobilized social capital. These propositions are used to understand the results of my research on students mobilized social capital in the college selection process as defined by Lin's concept for social capital theory.

Lin offers three structural assumptions regarding social capital (Lin, 2001a, p. 56). First, social structure consists of set positions rank-ordered by such indicators as class, authority and status. These individuals have advantages by way of greater access to and control of resources as well as to positions at lower ranks. By default, these individuals in the social structure have greater control of social capital. An important implication of this assumption is that those occupying the higher positions can exert more influence over those at the lower levels. Second, that valued resources such as higher occupational jobs tend to form the basis for hierarchical structures such as wealth and power. In relation to this research subject, it would seem that those that native students compared with immigrants would have more access to valued resources which would enable them to seek various higher educational institutions from which to choose than native students. They might be more likely to come from families where the parents had been to college and therefore the student's social capital would be higher due to the information about choosing a college embedded in their social network with their parents, etc. However, this information is becoming increasingly more available to all individuals through such mechanisms as cybernetworks and as Lin suspects provides equalization opportunity. Is it possible that the information embedded in these cybernetworks can alter these assumptions? Lin also explains that in social structure there is the possibility for exchange of resources across dimensions as well. In this instance, it might be the case that a family has financial resources to hire a private educational consultant who has the valued informational resources regarding the college selection process. This allows the educational consultant to exchange their knowledge for

additional wealth and the family with low knowledge but wealth to exchange it for an increase in their college search and selection knowledge in this network. Finally, it assumes that the hierarchical structure tends to be pyramidal. In other words, there are fewer individuals at the top of the hierarchy and more at the bottom of the hierarchy levels of the structure.

This is not always the case numerically but for our purposes in most instances, parents with higher levels of education tend to be in higher socioeconomic levels of society. Therefore, education and income tend to go hand in hand as does the percentage of people in the United States who possess higher degrees (see Table 1). For example, the 89–90 cohort studied by NCES, shows that those students in the highest quarter of family income also had the highest rate of completion of a bachelor's degree as well as the highest rate of its members still enrolled in a bachelor's degree program if they had not yet finished the degree in five years.

Table 1 *NCES beginning postsecondary longitudinal study*

	Completed (highest level)			No degree or certificate		
Student characteristic and year first enrolled	Bachelor's degree	Associate's degree	Vocational certificate	Still enrolled at 4-year institution	Still enrolled at 2-year institution or less	Not enrolled
Family Income						
Lowest 1/4						
1989–90	1.31	1.43	1.57	0.92	1.14	2.06
1995–96	0.97	1.57	1.38	0.97	0.81	1.76
Middle 1/2						
1989–90	1.19	1.06	1.12	0.73	0.76	1.44
1995–96	1.02	0.84	0.98	0.81	0.92	1.35
Highest 1/4						
1989–90	2.02	1.59	1.21	1.21	1.15	2.05
1995–96	1.95	1.07	0.87	1.19	1.12	2.01

Source: U.S. Department of Education, NCES, 1989/90 and 1995/96 Beginning Postsecondary Students Longitudinal Studies (BPS: 90/94 and BPS: 96/01).

Note. Standard errors for the percentage distribution of 1989–90 and 1995–96 beginning postsecondary students by their status at the end of 5 years, by student characteristics and year first enrolled.

Interestingly, the lowest quarter of family income appears to have displaced the middle quarter group between the 95–96 cohort versus the 89–90 cohort in relation to both bachelor degree completion and continued enrollment in a bachelor degree program suggesting that something has occurred to better enable the lowest SES group in relation to their quest for a four year degree that is not happening for the middle income families. It is important to note that this report combines the two middle quarter income ranges which can skew the numbers presented.

Should they have been separated, it would present a clearer picture of more precise income ranges. Overall, though there has been some improvements, it still holds true that the lower income families tend to represent a majority of the two year and vocational degrees, a lower percentage of the four year degree completion and that if not obtained in five years tend to not continue their enrollment in comparison to the higher SES groups. In relation to interaction and actions, Lin also states two assumptions about social capital theory. First, social interactions most likely take place among individuals at similar or adjacent hierarchical levels better known as the principle of homophilious interactions (Lin, 2001a, p. 62). For example, students interact with their friend on Facebook.com. The second assumption for the theory is "heterophilious principle of interactions" (Lin, 2001a, p. 58). This is the network between individuals of dissimilar social positions such as an individual connecting with a perceived entity of higher social status in order to benefit from their information. For example, a student who knows very little about the college search and selection process interacts with an admission counselor in order to gain a better understanding of the process. This interaction might occur through more traditional communication methods such as an in-person conversation or they might choose to do this through a chat room hosted by a college or university. In the cybernetwork example, what is known to these actors is that they are all in the cybernetwork to give and receive information about the general college search process. However, why did they choose this chat room? What did each of them look to get out of this resource? What was the benefit and how is the cybernetwork different from the traditional. *Figure 1* provides a picture of the social capital model as constructed by Lin and is useful to understand the factors considered in my research. For example, the structural position related to the students (native and immigrant) that I propose to study. The network location or tie strength and bridging represents those formal (e.g.,

guidance counselor, admissions counselor, coach, etc) would be the weak ties according to their role category and informal (e.g., mother, father, sibling, etc.) would be the strong ties. The purpose of action refers to the student either maintaining (expressive action) their resources/knowledge about the college search and selection process or creating new knowledge (instrumental) about this process typically with their weak ties. The interaction among these three influence the social capital or embedded resources obtained by the student as a result and that social capital in turn has an impact on the outcome. The outcome in my research is both the type of college in which the student enrolls (two year versus four year) and the student's view that their degree sought will positively impact their current SES.

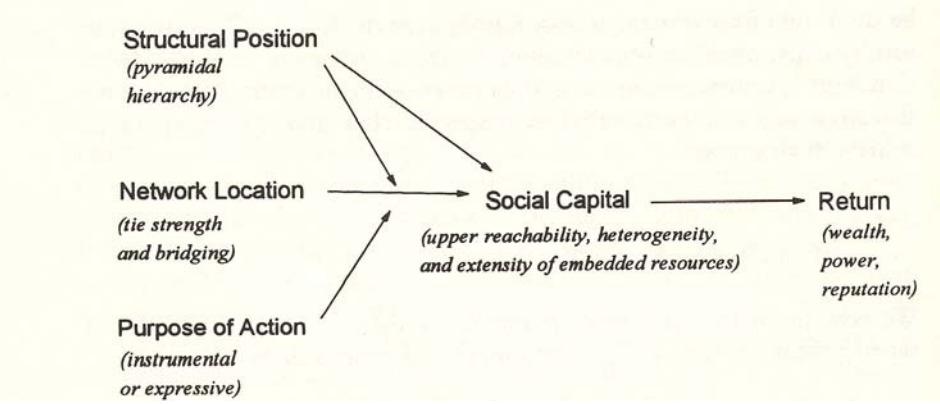

Figure 1. Social Capital Model from Lin(2001a).

Lin (2001a) also outlines several theoretical propositions that are related to these assumptions of structure, interaction and action and will assist as I situate the cybernetworks along with the traditional ones into this social capital model in my analysis. They are the strength-of-position of the individual in the social structure, and the nature and strength-of-tie between individuals. It should be noted that there are many other propositions and postulate that apply to social capital theory and are connected to but not necessarily the focus for my research.

However, I list them here for reference as an understanding of their definitions is necessary to fully understand the three important to my research.

The structural postulate: valued resources are embedded in social structures in which positions; authority, rules and occupants (agents) usually form pyramidal hierarchies in terms of the distribution of valued resources, number of positions, level of authority, and number of occupants. The higher the level in the hierarchy, the greater the concentration of valued resources, the fewer the number of positions, the greater the command of authority, and the smaller the number of occupants.

The interaction postulate: interactions usually occur among actors with similar or contiguous characteristics of resources and lifestyles – following the homophily principle. The greater the similarity of resource characteristics, the less effort required in interaction.

The network postulate: in social networks, directly and indirectly interacting actors carry varying types of resources. Some of these resources are in their personal possession (personal resources or human capital), but most of the resources are embedded in others with whom each actor is in contact, directly or indirectly, or they are embedded in structural positions each actor occupies or is in contact with.

The definition: these structurally embedded resources are social capital for the actors in networks.

The action postulates: actors are motivated to either maintain or gain their resources in social actions – purposive actions. Action to maintain resources can be called expressive action, and action to gain resources can be called instrumental action. Maintaining

resources is the primary motivation for action; therefore, expressive action is the primary form of action.

The social-capital proposition: the success of action is positively associated with social capital.

The strength-of-position proposition: the better the position of origin, the more likely the actor will access and use better social capital.

The strength-of-strong-tie proposition: the stronger the tie, the more likely the social capital accessed will positively affect the success of expressive action.

The strength-of-weak-tie proposition: the weaker the tie, the more likely ego will have access to better social capital for instrumental action.

The strength-of-location proposition: the closer individuals are to a bridge in a network, the better social capital they will access for instrumental action.

The location-by-position proposition: the strength of a location (proximity to a bridge) for instrumental action is contingent on the resource differential across the bridge.

The social-resources proposition: social resources (e.g., sources accessed in social networks) exert influence on the outcome of an instrumental action (e.g., status attained).

The structural contingency proposition: the networking (tie and location) effects are constrained by the hierarchical structure for actors located near or at the top and bottom of the hierarchy (pp. 75-76).

The first proposition is the strength-of-position proposition. Lin (2001a) states that better embedded resources accessed in the social networks lead to better outcomes such as improved status. As such, typically those in higher positions have access to better embedded resources in consideration of the social capital structural postulate that indicates,

> Valued resources are embedded in social structures in which positions; authority, rules and occupants (agents) usually form pyramidal hierarchies in terms of the distribution of valued resources, number of positions, level of authority, and number of occupants. The higher the level in the hierarchy, the greater the concentration of valued resources, the fewer the number of positions, the greater the command of authority, and the smaller the number of occupants. (Lin, 2001a)

This proposition will be of particular importance in my consideration of the cybernetworks as I suspect and equalization of opportunity to exist and therefore, it would challenge this proposition if natives compared to immigrant students are shown to use and benefit equally or greater from the use of resources embedded in their cybernetworks.

The other propositions relate to the strength-of-tie (homophilious/strong and heterophilious/weak). I have already touched upon the concept of strong ties in the review of Coleman's work however, for my research, the concept of weak ties, first introduced by Granovetter might further our understanding of cybernetworks and their use among students in the college selection process. By definition, some cybernetworks in addition to more traditional networks considered by Granovetter seem to function as weak-ties. Weak ties are described as having less intimacy, less intensity, less frequent contact, fewer obligations and weaker reciprocal services (Granovetter, 1973, 1983; Lin, 2001a). Granovetter states that information can flow through such a relationship between the actor and an individual or group and its ability to provide a gain or advantage for the actor if accessed and proven to be useful. Some cybernetworks satisfy this type of relationship. They are interactive Web sites or chat rooms where individuals go or gather to share and gain information that is new for them/instrumental action. All individuals are unknown to one another. Not only does the student gain information

but the group connected to him/her gains because of the addition of this resource/information held by one of its members. Lin expands Granovettor's theory of weak ties by adding the considerations brought into focus by Burt (1992, p. 18) who introduces the idea of a "structural hole" in these relationships. Burt indicates that these holes represent a non-redundant contact or "near emptiness of linkages" between groups (Burt, 1992; Lin, 2001a, p. 70). Unlike Granovettor whose focus was on the bridges or linkages between the individuals or groups, Burt considers the void of such bridges. However, the consideration is for the location of individuals and their proximity to the bridge between clusters. As such, Lin concludes that the closer an individual is to the bridge between two groups the better access they will have to the social capital embedded in that group. If the bridge between ties, connects the individual to a group located in a higher social position and one applies the "strength of position" proposition whereby that higher group should have more valuable resources accessible through their ties and networks, then accessing these groups should provide better information and result in better outcomes for the individual. For example, a middle class student joins a Facebook.com group created by fellow classmates who he/she perceives to be a higher status group. That Facebook.com group connects itself with the National Association for College Admissions Counselors (NACAC) as a number of them are starting the process of searching for a college. The connection between our students and NACAC is only due to his/her association with the peer Facebook.com group. Therefore, represents more of a whole between the two or a very weak link. Their closeness to the bridge between the peer Facebook.com group and NACAC is what Burt would conclude to be the hole. In theory, the student should have an improved knowledge about the process and possibly result in improved college choice outcomes such as a low SES or disadvantaged immigrant student enrolling at a four year college rather than a two-year college because of his/her proximity to the bridge

between the peer Facebook.com group and NACAC. This trend would suggest that the relationship has resulted in a positive or changed outcome that is traditionally expected.

These concepts about social capital according to Coleman, Granovetter, and Lin will be used to provide the theoretical context to interpret and understand the findings of this study. More specifically, these points will be used to explain my findings about how native and immigrant students engage with and mobilize the resources obtained through cyber- and traditional communication methods with their formal and informal networks in their college search process as well as the impact of their use and usefulness on college attendance patterns and personal outlook on social mobility.

2.2 LITERATURE REVIEW

2.2.1 Social networks in the cyber- environment

This section introduces the concept of cybernetworks proposed by Lin and its implications for social capital theory. Second, I will review the related research on cybernetworks that discusses new concepts of community; support for Lin's assertion of positive and negative outcomes resulting from the use of embedded resources as well as the his strength-of-ties proposition within cybernetworks; issues of access and affordability in relation to the digital divide concept and the creation of new forms of hierarchy within cybernetworks to review current concepts/considerations on the topic. These will all provide additional support for the importance of my research.

Lin (2001a) adds to our understanding of social capital theory by bringing into focus cybernetworks as a form of social networks. They are a form of social networks as they link people, organizations and knowledge together (Wellman, 2007). Cybernetworks on the Internet

are forms of social capital. They are a resource that provides information and forms of enticements to make individuals act, as well as the formation of collectives, all with few time and space constraints representing, "social networks on steroids" (Lin, 2001a, p. 215) In fact, it may be the largest and rapidly growing social network[7] known to us. Intrigued by the argument that social capital was on the decline as represented by declining participation in social organizational (Coleman, 1988; R. D Putman, 1995; R. D. Putman, 2000), Lin states that a new form of social capital is on the rise or at least stabilized when one considers the Internet. In fact, Wellman, Haase, Witte Hampton's (2001, p. 1) study of over 39,000 respondents to a 1998 National Geographic Society survey supports Lin's assertion finding that the Internet is becoming normalized into everyday life and has become a supplement to face-to-face and telephone communication. Considering this possibility, Lin situates this new form of social network and social capital into the group level of analysis by suggesting the consideration that cybernetworks allow for, "a new era of democratic and entrepreneur networks and relation in which resources flow and are shared by a large number of participants with new rules and practices, many of which are devoid of colonial intent or capability" and that there is a "possibility of a bottom-up globalization process whereby entrepreneurship and group formations become viable without the dominance of any particular class of actors" (Lin, 2001a, p. 215). With this understanding Lin suggests that what is important now with the understanding of cybernetworks as a constantly developing form of social capital is the need to compile basic data and information such as the extent individuals are spending time and effort engaging others over cybernetworks, compared to the use of time and effort for interpersonal communications

[7] Wellman (2007, p. 2031) writes, "Just one small portion of the Internet – Usenet members – participated in more than 80,000 topic-oriented collective discussion groups in 2000. 8.1 million unique participants posted 151 million messages. This is more than three times the number identified on 27 January 1996."

and other various activities. In addition, the extent of useful information that is being gathered via the cybernetworks compared to more traditional forms.

Research, since Lin's first consideration of the notion of cybernetworks as social capital has attempted to better understand its role. The increase in the use of "groupware" such as chat rooms and other social networking vehicles has created two specific developing areas: community networks on- and offline and knowledge access (Wellman, 2007). Communities in this new environment have taken on a new definition. Once associated with densely knit and bounded neighborhood groups, the Internet provides community void of these characteristics and yet they still provide support, information and a sense of belonging. Wellman's work considers both positive and negative implications for the Internet and its implications for social networks. He argues that most of the debate on the subject has circled around several view points of the subject:

Manichean	The Internet is bringing heaven or hell, but nothing in between.
Unidimensional	The Internet is such a powerful force that other considerations, such as gender and status in an organization, are ignored.
Parochial	The Internet should be considered as an entity in itself, rather than as fitting into the full range of work, community, and daily life.
Presentist	The Internet is such a transforming force that long-term social trends, such as the pre-Internet move to networked communities, are irrelevant. (Wellman, 2007, p. 2031)

However, the research tells us that the Internet is extending networked communities in the developed Western world (Wellman, 2007, p. 2032). It has provided us with the ability to maintain our old ties and develop more ties with individuals of common interest. Also, it allows

time and space to become less important to what connects us to a "community." We are now able to grow the group to which we belong and bring into direct contact those with whom this may not have been possible absent the Internet. In relation to this proposed research, it introduces the notion that new and increased information about the college search process could now be available to an immigrant student that was previously unreachable and therefore useable. If so, my research will contribute to our understanding of how and which networks and their resources, via cybernetworks, are being used and mobilized. In addition, in what ways is it altering the obtained goals of the individual students and groups known to us through current research?

Two researchers begin to answer some of the basic questions about cybernetworks raised by Lin regarding how, when and in what ways individuals are using the Internet. Wellman's (2001) analysis of the National Geographic Web survey concludes there to be a construction transformation of our society's social networks and possibly an increase in networking activity. His data shows that face-to-face visits and phone calls are neither more numerous nor fewer for people who use e-mail a great deal. Another study however shows differences in the level of use of the Internet by the user and its results on the individuals use in their community (Wellman et al., 2001). Therefore, it would be interesting to see what implications may result from student's use of the Internet for their college search. Did it increase their connections with certain formal and informal individuals? Did it alter the way in which they choose to communicate with them? In what ways did these network connections improve, keep constant or reduce their experience with choosing a college? How did the cybernetwork improve their contact/ties with friends and families compared to what they might have experienced without it? In other words, since time and space have reduced, are they more likely to ask questions and get answers from distant relatives and family who are a good knowledge base of information therefore strengthening their

informal ties? Similarly, did they more readily create new connections with information sources for similar reasons or benefit from their weak ties? What was the depth measured by numbers of persons for their in-person network and their cybernetwork?

Research in fact, has found that Internet tools are being reflected into the daily lives of Americans and that it has improved their strongly tied social networks as well as allowing them to learn new things (Howard, Rainie, & Jones, 2001). Most interesting about this research was that although demographic factors (gender, age, education, income, race, and ethnicity) affected people's use, the most important factor was their length of experience with the Internet and their frequency of logging on from home. Howard et al., (2001, pp. 393-394) classified as four types of users:

Netizens	Those users who are the heaviest and most enthusiastic Internet users.
Utilitarians	Those who have a more functional approach to Internet use.
Experimenters	Those who have ventured into various information spheres on-line
Newcomers	Those who are beginning to enjoy the fun features of the Web.

Still other research shows that changes in life stages or lifestyle alters the use and/or time usage of the Internet (Anderson & Tracey, 2001) and also confirms that the Internet is just another resource that has become integrated into our lives as a different mode through which we accomplish the same ends to our means. As an example of the former, a large percentage of students, as evidenced by the Eduventures, Inc. survey, interact with colleges and college search Web site and chat rooms when they begin the college search process right up through the actual decision and possibly beyond. Therefore, this change in the life-stage of the student has resulted in the mobilization and use of the information embedded in these cybernetworks. In relation to

the latter research finding, similar to how a telegram added to our communications style compared to letter writing or the telephone reduced the need for telegrams and now email has reduced the need for telephone usage and so on. The end goal still remains the same which is to get the information from one person to the other. However, Anderson & Tracey's (2001) study did not consider what the life-stage or lifestyle change was and if its outcome was any different using this new resource rather than the old. It is the integration of the strength-of-position proposition proposed by Lin into this research that would have been most helpful. For example, when the telephone became available, who had it and what implications did it have on their life. Certainly those with more wealth had the new technology which gave them a quicker response time in order to get thing done rather than those relying on writing letters. Seconds versus days is a critical difference.

The digital divide is important to note when considering cybernetworks. The National Telecommunications and Information Administration (NTIA) has been tracking the digital divide since 1994, reported in 2000 and in 2007 that gaps between groups based on income levels, educational levels and geographic locations had shrunk in that decade (*Falling Through the Net: Toward Digital Inclusion: A Report on Americans' Access*, 2000; *Falling Through the Net: Toward Digital Inclusion: A Report on Americans' Access*, 2007). For example, of American households owned computers was 61.7% in 2007, 51% in 2000 and 42% in 1998 and 71.4% in 2007 and 41.5% in 2000 had access to the Internet at home, compared to 26.2% in 1998. However, deeper analysis showed different levels of access when SES was considered. For example, in 2007, households in the highest income bracket reported 88.57% having Internet access while only 36.16% in the lower income bracket had access at home. The statistics regarding access anywhere by income range improve with both groups as 94.47% was reported

for the higher income bracket and 37.54% for the lower range. However, both were improvements over the percentages in 2000. In consideration of the urban population which the present study will concern itself, the NTIA reported in 2007 slightly better statistics for the same populations in relation to home and anywhere access. For the lower income bracket, 27.12% reported access in the home and 38.91% having access anywhere. The higher income bracket showed 89.33% having access in the home and 94.57% having access anywhere. More specifically, in the urban household of New York in 2007, the NTIA reported that 60.74% reported access in the home which was just slightly less than the national average of 61.71% and 66.81% reported access to the Internet anywhere compared to 71.04% reported nationally. However, a recent study at the University of Minnesota indicates a greater shift to a more connected and less divided community. This research that surveyed 600 urban teens from families making less than $25,000 a year, found that nearly all of these students were going on-line and usually from home (Intagliata, 2008). In addition, this research considered how students were engaging with the Internet and its social networking possibilities. Three quarters of those surveyed indicated that they had a Facebook or MySpace page. These recent finding show a different picture than at the NTIA data and give an indication that students at all SES levels are engaged in some form of networking in the cyber- environment at least in certain environments. Clearly, where a student is situated has an impact on the access to the Internet as evidenced by both of these findings.

The economics behind the Internet and access to it is also an important consideration as we witness the decline of the “digital divide.” Between 1985 and 2008, technology has become increasingly less expensive. A comparison of the cost of a laptop demonstrates that such a purchase has become more affordable to more types of individual since it is now a third of the

cost. In 1986 a laptop cost $1,995 and in 2008 the average laptop cost $715 (Ogtrop, 2008, p. 120). In addition, the Internet is now accessible by phone and through a television which has allowed individual to forgo the purchase of a computer in order to access information from a cybernetwork. However, there are considerations currently developing that could have economic implications which would have negative results toward these digital divide gains. Internet providers are contemplating a switch from a flat fee accessed to users of the Internet to one based on their time spent using it (Stelter, 2008). This fee for "amount of time spent" would limit those with less economic resources from the amount of time and therefore the amount of information they could gain from the networks which the Internet provides to them.

There is also evidence showing new forms of hierarchy being created within cybernetworks. For example, recently LexisNexis, a leading global provider of client development solutions for the legal profession, announced an agreement with the creator of LinkedIn to make their Martindale-Hubbell® legal network the on-line networking destination for attorneys (Taylor, 2008). LinkedIn network allow individuals to join networks which are either password protected or by invitation only. Based on clearance, only can a person gain access to the network. This resulted in a more closed network where everyone knows one another and keeps others out from accessing the group's capital. However, these member-only groups are also facilitating positive outcomes as well. For example, the world of philanthropy is being transformed by the use of on-line networks as they are using their network to work for them and encourage their network to enlist their personal networks to give (Carroll, 2008). Since the appeal is a personal one coming from a trusted closer tie to the individual, charities are gaining in their contributions. Although, the overall dollar amount given on-line currently is only 2–3% in the U.S., similar to the rapid growth found in the use of on-line networks in the college

selection process, charities have seen the increase in on-line giving grow by 50% per year and in particular from groups such as those in their 20s, 30s and 40s who haven't previously been donors. We have witnessed this ease and growth of giving most recently by the Sen. Barack Obama's prudential campaign which rapidly sustained itself through an "army of small donations" (Carroll, 2008). Personalization in the network which appears to increase the level of trust is also the focus of a recent initiative in the New York City school system (Medina, 2007). The project would connect 10,000–15,000 students with high profile, celebrity figures via cell phone and text messaging so as to encourage their good academic performance. The program materialized because the city has found disconnection with their students understanding that good academic performance can lead to better jobs and improved income prospects. Cell phones were chosen as the means by which this program will be delivered because the preliminary research showed them to be the primary means of communication for the city's youth. This finding has implications for this study which will consider higher educational decisions of this population as a large majority of those attending the City University of New York come from the city high schools.

Considering these current events as well as research findings as it relates to the topic of the Internet, its' cybernetworks and their ability to transcend time and space therefore having a direct impact on the extent to which they can facilitate their information/knowledge among its actors, and the degree to which this knowledge is mobilized/used by those same actors makes the case study of cybernetwork use in the college selection process timely and important to furthering our understanding of social capital theory. Also, considering that as access to technology is rising in our schools; there is growth of the use of cybernetworks in the college search process (*College Search and the Millennial Generation*, 2007); and immigrant higher

education enrollment trends show patterns of no enrollment or enrollment which places them into lower socioeconomic strata,[8] the possibility of a developing social network (cybernetworks) that could provide opportunity to transcend these conditions as first introduced by Bourdieu (1986)[9] has exciting implications for immigrants, the U.S. economy, and the development of social capital theory. More specifically, it should allow us to understand these virtual "social" relationships in which individuals and groups engage, how they are mobilized to attain their goals (college enrollment) and solve their problems (lack of college search information), how they experience opportunity and privilege, how they organize and come together to achieve collective goals which are critical to our understanding of social capital (Stanton-Salazar, 2001).

2.2.2 College search and selection literature

The college search and selection literature on college choice breaks the process into three main segments called the Hossler model (McDonough, 1997, p. 4). The first stage is the early thoughts of going to college otherwise known as predisposition. The final two stages are the search and selection stages respectively. This review focuses on the latter two. The college search selection process has been the topic of research by many scholars in diverse academic fields. This literature ranges from social psychological; economic and sociological status attainment, to marketing and enrollment management. Social psychologists consider the impact of academic programs, campus social climate, cost, location, and influence of others on student's choices; students assessment of their fit with their chosen college, and the cognitive stages of college choice. Economic studies have focused on the college choice as an investment decision and enact

[8] See U.S. Bureau of Labor Statistics.

[9] Pierre Bourdieu's concept states that education leads to social reproduction and a stratified society by honoring the cultural capital of elite classes. Therefore, students who possess the valued cultural capital are rewarded with high academic achievement. Upon entering the workforce, the elite class members are channeled into high paying jobs and powerful positions within society. Those who did not achieve the same level of academic success fall into subordinate occupations and status level.

the rational choice model similar to the foundational element of Coleman's social capital definition, to explain student decisions. The sociological studies typically have analyzed the impact of the student's social status on the development of their aspirations for educational attainment and measure inequalities in college access. The social psychological and the sociological are covered in the other subtopics in this literature review. Therefore, this section will review relevant economic studies and the enrollment management studies and their consideration of the Internet. In addition, I will use these finding to construct my focus group and survey questions with relevant Internet site and cybernetworks that the research indicates are used or not used.

In relation to economic studies although I recognize the strong role of financial aid in the college decision, my focus is with the cybernetwork developments than its importance in the decision. This is because the students studied in my research have already chosen CUNY as their school and my analysis considers their choice between two-year and four-year CUNY colleges. However, since they have all chosen a CUNY college and mostly due to financial issues and the lack of any difference in cost between a CUNY two-year school and a four-year school, delving into this related research is not relevant to my research group.

Many studies regarding the search and selection process have determined the following factors to be consistently influential: parents; the college's size, location, academic program, reputation, prestige, selectivity, alumni; the student's peers, friends, and guidance counselor; and availability of financial aid (Hossler, Braxton, & Coopersmith, 1989; Manski & Wise, 1983; Zemsky & Oredel, 1983). The findings have shown that student aid has increased the student attendance in higher education institutions and has redistributed students to different types of institutions which may have proven to be out of their financial reach. The current banking and

finance crisis in the United States has had ripple effects on higher education financial aid. Banks have developed more stringent lending regulations that allow for less risk in loans that they issue. These new rules have been applied not only to home loans but college loans as well. This decision has resulted in some banks exiting the Federal Family Education Loan Program altogether. More troubling is the decision of such lenders as Citibank, to end their relationship with two-year colleges, but continue their lending with more selective four-year universities (Rosenkrans, 2008).[10] Based on the types of students who typically attend two-year schools, it seems that lower SES and immigrant populations will more likely face this matter than other groups as they attempt to afford college in the fall 2009. A story illustrating this discrimination was written about in a recent posting on the National Association for College Admissions Counseling (NACAC) listserv. A high school counselor reached out to member colleagues to find a lender willing to work with an undocumented student with an ITIN (Individual Tax ID Number) and a U.S. Citizen Co-signer with good credit but has been unable to find a bank willing to offer an educational loan. However, it does appears that in some ways, all students are being impacted as evidenced by the recent decision of the Massachusetts Educational Financing Authority, whose bulk of loans is comprised of private educational loans, to stop taking applications for federally backed educational loans as of April 2008 and will not offer them for the Fall 2008 semester because of the financial markets (Huckabee, 2008). This clearly will have a significant impact on college attendance by all students in this state. Interestingly, on the heels of this development a new cybernetwork has been launched in 2007 with $4.2 million from venture funds to address this recent development. Greennote.com has surfaced to "harness the power of social networking to give college students a new option for financing their education"

[10] This action is currently being challenged in senate under a bill proposed by Senators Patty Murray, Democrat of Washington, and Christopher J. Dodd, Democrat of Connecticut which prohibits lenders from picking and choosing among institutions (Glater, 2008).

(Daigle, 2008). The Web site's creators credit Mohammad Yunus' notion of microenterprise as their inspiration. In 1976 Yunus founded the Grameen Bank in Bangladesh. Students create a profile, in greennote.com, a site similar to Facebook.com, specifically addressing their educational goals and financial needs. This information is available to all those in the students cybernetwork allowing students to secure loans as small as $100 from family and friends, and mostly recently from the Greennote.com network, open to any investors. The owners of Greenote.com then handle the loan process for a fee from documentation through repayment. The lenders receive a 6.8% return on their investment. By March 2009, there have been approximately 3,000 users per month[11] (Maher, 2009). It is too early to adequately understand how the public will respond to this cybernetwork. So far one student was quoted stating, "I use Facebook to keep in touch with friends. But, I don't know if I'd trust the same sort of system to handle money for school" (Daigle, 2008). As theorized in social capital and its consideration of networks, trust plays an important and critical role in how and to what degree we mobilize our networks and is considered in my analysis.

The enrollment management research, in relation to its interest in the questions about college choice, focuses on institutional marketing. In the early 1980s higher education and college administrators became very interested in the college selection process. This had been prompted by marketing challenges that had developed as colleges and universities needed to find more students from their less traditional markets in light of demographic and economic changes in the United States (Litten, 1982). A better understanding was needed to give better insight to how the institution might effectively manage their involvement and role in that process. Burtnett's (1999) report provides a historical summary of the early adoption of the Internet and

[11] In March 2009, Greennote.com was bought by tuitionU.com, a loan researching company, for a undisclosed price.

web adoption in college admissions and college choice. At the time of his report, admissions officers had been marketing and offering their information on their Web sites only 3–4 years. The main activities of admissions offices included presenting general college and admissions information, responding to e-mail inquiries, and application processing. The colleges surveyed indicated that 71% of them were not using their Web sites as a recruitment tool (Burtnett, 1999, p. 4). Eight years later, the Eduventure (*College Search and the Millennial Generation*, 2007) survey showed not only that colleges and universities are using Web sites as a marketing tool, but they are trying to understand how to better use them in their marketing efforts. The difference in the focus between these two reports shows us the speed and integration of this new technology not only by colleges and universities, but the increasing role that it is playing in the college search process for students. Interestingly, Burtnett (1999, p. 6) touches on the impact of cybernetworks as a new form of capital; an information source and its early impact on how the Internet had broken the geographical barriers associated with traditional social networks and expanded the reach of the college as represented by the student web inquires geographical diversity.

The use of cybernetworks in relation to college search and selection is also growing outside of the United States. For a long time, there has been a lack of research on the college selection process and the use of the Internet in most other countries. Moogan and Baron's (2003) survey of 674 UK students is an example of this enrollment management concern around the globe. They look at the college selection process in that country noting their lack of such research which has mostly been conducted in North America. Although their research notes the Internet as the fourth most used source of information, it fails to consider the college search stage, the stage where students most frequently use the Internet to begin their investigation of

schools (*College Search and the Millennial Generation*, 2007). In addition, it fails, to make any comparisons between Internet or cyber- communication methods and the more traditional communication methods nor did the authors discuss which formal and informal networks are used in the cyber- communication methods therefore failing to provide much insight into what role the Internet might have played in the college search and selection process. They consider the Internet as a source of information but fail to consider the presence or degree of the Internet and its many dimensions.

Eduventures, a learning collaborative firm for Higher Education provides the most recent look at students' attitudes and use regarding cybernetworks in their college search and selection process. The college Web site has surpassed the college view book as the leading source of information in the U.S., according to Eduventures (unlike in the U.K. according to the Moogan and Baron (2003) survey). It came as a surprise to Eduventures that blogs and chats as forms of cybernetworks were used by only 5% of those students surveyed, "given the Millennials' proficiency and experience with the new media" (*College Search and the Millennial Generation*, 2007, p. 2). Less than 10% used other forms of cybernetworks such as MySpace, Facebook or YouTube (*College Search and the Millennial Generation*, 2007, p. 4). However, the report does expand upon this finding by implying that students will put less trust in chat rooms if it is unregulated and anonymous. The survey asked if the room had trusted networks such as admissions counselors or current students (the top two trusted resources — 63% and 73% respectively), would this change their use and trust in that venue? The survey responses showed that when blogs are college-sponsored and are written by current students, the trust in those two entities does translate into a higher level of trust in the cybernetwork because of its location and facilitator therefore indicating affirmative answer. E-mail as an information channel for these

students was reported as being highly used, but the Millenial's exhibited skepticism with this channel. The campus visit (71%) was discovered to be the most trusted source of their information followed by the college Web site (55%). When the Millenials where asked about the sources they relied on for gathering the important information for making their college attendance decision, they noted them to be college guide books (54%), high school counselors (50%), family and friends (49%), college Web sites (45%) and professional success of graduates (43%). The reports' Use-Trust Score, showed the value of trust in the various forms of social networks and specifically cybernetworks in the college decision process. A factor noted in the variance of use by students of the web in the college search process was influenced by their access to it. Students from lower socioeconomic backgrounds were found to have less access than their peers, but the report did note that access has improved for low-SES students due to technology investment by American high schools as noted earlier. The report noted that college and universities are just learning how to incorporate and use this medium of communications and as it develops Eduventure expect to see student use and trust change. It is a critical time to study cybernetworks since the research has indicated the growth in it. In addition, in the past college search research conducted by institutions has typically focused on the individual college rather than the student or and its application to social networks and social capital theory (Coleman, 1988). Therefore, my study's more student oriented rather than college oriented perspective combined with using the structure of social capital theory would be additive to the development of the theory as well as provide practical applications relevant to the body of literature on college admissions and marketing.

Social cybernetworking developments similar to those focused on financial aid issues such as Greennote.com, have also appeared in the college search and selection process. On May

24th, 2007 Facebook.com, one of the top three on-line social networking sites, launched an API (Application Programming Interface), SkoolPool™, allowing students to keep up-to-date displays of the schools they are considering. It also allows them to organize their college search and selection information electronically and share this information with their network of friends on Facebook. Academica Group which owns this application has indicated that 75% of college and university applicants are active Facebook.com users therefore making this application a potential on-line winner for facilitating the college search and choice process (Group, 2007). More recently, on September 17, 2008, a more independent version of the same type of site called Unigo.com, a New York City-based colleges resources and student community site, has been released ("Most Comprehensive and Authentic College Resource Debuts September 17th," 2008). This free site was developed over the past year by 18 full-time editors, 200 on-campus interns and more than 15,000 students to build a searchable database resource on America's top 225 colleges. The site has tens of thousands of candid and original reviews, videos, photos, documents and more for its interactive community. The intent is to help students make better college decisions. The founder and CEO of the company is a 26 year old who was featured in a New York Times article on college admissions when he was 17 years old by the Times education reporter Jacques Steinberg. He was also the subject of Mr. Steinberg's guide book on college admissions; The Gatekeepers ("Most Comprehensive and Authentic College Resource Debuts September 17th," 2008).

Finally, the college search literature has mainly employed quantitative methods for its analysis. Only more recent literature has begun to employ the use of qualitative methods to provide more insight at the micro-level into the process of students college selection (McDonough, 1997, p. 4). My research combines quantitative and qualitative methods through

the use of focus groups and content analysis with statistical analysis of my survey responses. In other words, I am using micro-level analysis and then testing those findings quantitatively with my group analysis to promote internal validity.

Therefore, the literature reviewed here presents important findings for my consideration of cybernetworks in the college search and selection process as well as a providing a guide for the construction of my focus group and survey instruments.

2.2.3 Educational attainment literature

As mentioned in the introduction to my dissertation, the educational attainment of immigrants in the United States has declined greatly due to immigration policy changes dating back to 1965. With a large number of college bound students having some degree of educational disadvantage, social capital researchers have investigated issues of structure, interaction in social networks that account for positive educational attainment. In this section I review shifts in student expectations that are reported in the 2006 National Center for Educational Statistics (NCES) followed by various social capital research focused on educational attainment. This review of the literature also provides evidence for how social capital theory has proven both positive and negative education attainment outcomes to be related to the structure and interactions of social networks. Therefore, it supports my use of the theories model to determine the network structure and interactions associated with enrollment patterns. Finally, it confirms the variables I consider for the qualitative and quantitative components of this study provides. I conclude with educational attainment research concerned with social capital theory does not and what my research will add to this body of literature.

First, I will review the changes in educational attainment. According to a recent report by the National Center for Educational Statistics ("Educational Attainment of People 18 Years

and Over, by Age, Sex, Race and Hispanic Origin, for the 25 Largest States: March 2000," 2000), there has been a change by race and SES in students' expectations regarding the highest degree they anticipate receiving (*The Condition of Education 2006*, 2006).[12] It is important to note in this survey that expectations for attainment grew among high school seniors for all SES levels. In addition, the disparity between low- or middle-SES and their high-SES peers decreased between 1980–1981 and 2003–2004. Since this dissertation focuses on the bachelor degree it is important to note that in 2003–2004 there was a minimal difference between SES and expectation in obtaining a bachelors degree (29% for low-SES, 36% for middle-SES and 33% for high-SES) compared to the differences in 1980–1981 (10% for low-SES, 19% for middle-SES and 31% for high-SES). In addition, the report shows similar strides in relation to race. Hispanic and Asian numbers according to the census data account for the largest current immigrant population. For the Hispanic population there was a reduction in those who saw themselves as achieving only a high school degree or less in 2003–2004 (6.4%) compared to 1981–82 (29.0%), as well as in those who believe they would only achieve some college (28.8% in 1981–82 compared to 23.1% in 2003–2004). In contrast, the number of Hispanics who believed they would obtain a bachelors or a graduate professional degree increased in these same years from 10.8% to 28.4% and 11% to 28.8% respectively. Similar shifts were found in the Asian/Pacific Islander population.

Social capital research that studies educational attainment has focused on five measures: dropout rates, high school graduation, college enrollment, years of schooling and more recently college retention and graduation. Dropout rates have been positively related to social capital, such as nontraditional family structure and number of siblings, but were negatively related to parent teen relationships, parent-school interaction/parental involvement, the number of moves to

[12] http://nces.ed.gov/programs/coe/2006/pdf/23_2006.pdf.

another home by students, and church attendance (Lopez et al., 2001; Smith, 1993; Teachman, Paasch, & Carver, 1997; M. J. White & Glick, 2000). Furstenberg & Hughes (1995) and Yan (1999) found that traditional family structure, high parents' expectations and encouragement, and frequent parent-teen interactions to be positively related to high school graduate and college enrollment. These studies also found intergenerational closure, number of friends known by parent, parent involvement in schools, a strong support network by parents, seeing close friends weekly and friends' high expectations positively related to these measures of educational attainment (Furstenberg Jr. & Hughes, 1995; Yan, 1999). A student physically relocating has also been shown to be negatively correlated. Social capital research has considered these same forms of social capital in relation to the number of years of educational attainment. Similar results were found in relation to family structure, family discussion, parents' influence and expectations, parents' cultural capital, parent-school involvement, and parent monitoring (De Graff, De Graff, & Kraaykamp, 2000; Dyk & Wilson, 1999; Kalmijn & Kraaykamp, 1996). The influences outside of the family were also shown to be important to educational attainment (Dyk & Wilson, 1999), such as discussions relating to jobs and education with other adults, teachers expectations and influence, and teacher interest in students. Finally, more recent research has focused on improved retention and graduation rates in college as a result of creating supportive networks in the college community (Banaria, 2004; Manuel, 2003). Therefore, the educational attainment literature reviewed here supports the connection between the use of social capital theory and educational attainment, the resulting positive and negative outcomes from the structure and interactions between various networks considered and various variables to consider in relation to my research. Finally, I will cover what is missing from the educational attainment literature and what my study will provide for it.

The developing role of cybernetworks is often absent in the educational attainment research connected to social capital theory. In addition, most of the research has relied on large datasets such as NELS or High School and Beyond (HS&B) to study the ways in which mobilized and assessed forms of social capital impact various educational outcomes. These datasets were collected during a time when the Internet and its widespread adoption had not been realized. As mentioned in this study's review on cybernetworks, the telephone, when it first became a means of communication altered the way and extent to which individuals maintained or even established networks. So too, does the appearance of the Internet. This research will consider cybernetworks in relation to other historically researched social capital factors to better explore how social networks are evolving and can be applied to social capital theory.

Therefore, the literature review on educational attainment provides three contributions to this study. First, the research supports the social capital concept of potential negative and positive outcomes resulting from shared resources between individuals or groups. Second, it provides a model that situates educational attainment as an outcome or results of social capital. Third, it confirms the variables I consider for the qualitative and quantitative components of this study.

2.2.4 Immigrant settlement patterns, incorporation and social mobility

The migration research on immigrants settlement patterns and incorporation is relevant to this dissertation (Hagan, 1998). Three topics in the literature are particularly important for our consideration: mobilized social capital[13] (Hagan, 1998), accessed social capital,[14] as well as

[13] Mobilized Social Capital Model – This model was developed with the Accessed Social Capital Model to show the relationships between social resources and status attainment. This process focuses on the mobilization of social capital in the process of status attainment. The contact status that the individual uses is seen as the mobilized social capital in the status attainment process. Contact status, along with education and initial positions, exert a significant and important effect on the status of the goal obtained. Contact status, in turn, is affected by education, network resources, and the tie strength between individual and their contact. Strength of ties is measured either with a

those that consider both and their impact on educational attainment. The review of this literature supports my use of social capital theory as a lens through which to view students understanding of the potential social mobility in relation to their network structure and interactions for the college search and selection process.

Migration literature typically defines social networks in terms of the more informal networks or personal relationships based on family, kin, friendship and community (Boyd, 1989). In relation to the micro (individual immigrant) or meso (immigrant group) view of social capital and social networks the literature has focused on how strong ties have resulted in better mobility and the lack of such resources having negative implications (Coleman, 1988; Coleman et al., 1997; De Leon, 2005; Portes, 1998). In addition, social capital is identified as sources of social control, family support and benefits through networks outside of the family which can exhibit positive outcomes as defined by social capital theory. For example, Zhou and Bankston (1998) found social controls or norms such as shame in an immigrant Vietnamese community in New Orleans to reduce instances of their children flunking out of school. Coleman's (1988) work focuses on family support and he discusses Asian immigrant mothers and their practice of purchasing two text books (one for the mother and one for the student) to learn their children's school material themselves in order to facilitate and support their child's learning in school. Valenzuela & Dornbusch (1994) show how family attitudes are a form of social capital important to academic success through the relationships between behavioral, attitudinal and structural dimensions of Familism and the students self-reported grades for Anglo and Mexican origin

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perceived strength (e.g., intimacy of the relationship) or with the role category (e.g., kin, friends, and acquaintances). (Lin, 2001a, p. 82)

[14] Accessed Social Capital Model - In this process, human capital (education, experiences), initial positions (parental or prior job statuses), and the individuals social ties (e.g.,, extensity of ties) are hypothesized to determine the extent of resources they can access through such connections (network resources). Further, network resources, education, and initial positions are expected to affect attained statuses such as occupational status, authority positions, sectors, or earnings. (Lin, 2001a, p. 82)

students . White and Glick (2000) found similar results with familial social capital and attitudinal measures in relation to recent younger and older immigrants versus their native counterparts. School-parent involvement as social capital has also been shown to have a negative impact on drop out and lower academic performance of students (Lopez et al., 2001). Lopez et al.'s, study is important because it considers the impact for the overall migrant school performance as well as the individual student as it relates to these network ties. Thus, increased social networks or mobilized social capital results in continuing education or improved academic outcomes otherwise known as human capital.

A second consideration in the literature concerns demographic composition or accessed social capital of the immigrant population and its' implications for the U.S. labor market. Migration research often considers; where migrants are coming from; education levels that migrants come with, socio economic background and destination. Zhou (1997, p. 66) writes , "differences in national origins, socioeconomic backgrounds, and geographic patterns of settlement are important factors for immigrant adaptation." The 2005 U.S. Census estimated that the total foreign-born population in the United States to be 35.7 million or more than 12 of the total population (Erisman & Looney, 2007, p. 12). The 2005 U.S. Census also reports that 38% of all new legal immigrants came from Latin America and the Caribbean, while 36% came from Asia, 16% from Europe, 8% from Africa, and 3% from other areas (Jefferys & Rytina, 2006). In addition, the counties that send the highest percentage of teenage and young adult immigrants to the United States are in Latin America (R. Rumbaut, 2004). Latin American immigrants also represent the immigrant population with the lowest educational attainment with only 44% of Latin American immigrants in the United States graduating from high school (Erisman & Looney, 2007). In addition, they come from very diverse socioeconomic backgrounds. Some of

these immigrants have obtained college degrees well above the U.S. native national average and some are far below depending on the country of origin. However, those immigrants tend to be from Europe, Africa and Asia. Only 11% of the Latin American immigrants age 25 and older were reported to have a bachelors degree or higher education compared to 27% of the total U.S. population, 34% of European immigrants, 44% of African immigrants and 48% Asian immigrants (Erisman & Looney, 2007). Immigrant job occupations and median family incomes compare to U.S. natives in similar ways. Therefore, assessed social capital variables are related college attendance patterns and therefore are import to be collected and acknowledged in my research findings. Immigrant destinations have also changed. Between 2000 and 2003 more than half of new legal immigrants located themselves in the U.S. cities which historically have been top destinations. Those cities are California, New York, Florida and Texas (Simanski, 2005). However, new U.S. destinations are beginning to emerge in recent years particularly in the Southeast. North Carolina and Georgia both increased in foreign-born population between 1990 and 2000 by 274% and 233% respectively (*Data Sources on the Foreign Born and International Migration at the U.S. Census Bureau*, 2003).

These cultural, economic and human capital resource considerations are important for my understanding and analysis of contemporary immigrants since they provide the necessary context and lens through which I can put into context their use of their traditional social networks embedded resources.

Changes in the "context of reception" is also important to the consideration of the U.S. immigrant population (M Zhou, 1997, p. 67). These changes have been noted in the current immigration literature in several areas. First, the gap between the rich and the poor due to globalization and economic restructuring has limited not only immigrant ability for social

mobility but also that of native born citizens. Second, the changing U.S. economy in relation to globalization has resulted in greater concentration of poverty among the lower class due to the decline in demand for low-skilled and semi-skilled immigrants and natives alike. Third, there has been an increase in the number of single-parent homes and more specifically among poor immigrant minority families that has been shown to have a negative impact on their education and socioeconomic circumstance. Fourth, a large number of lower socioeconomic immigrant students find themselves in the inner city schools of the United States. As such, some researchers indicted that the students experience what has been labeled the "oppositional culture" (M Zhou, 1997). Oppositional culture occurs when there is a disconnection between the promise of social mobility that is supposed to exist and the reality of a future that tends to result in socioeconomic isolation and even greater poverty. Some research have found that students and specifically immigrant students that experience this reality tend to reject the notion of upward mobility that results in a negative effect on their educational attainment (Suarez-Orozco & Suarez-Orozco, 1995).

Directly related to the present research, the topic of access to higher education and patterns of college choice of immigrants based on both assessed and mobilized concepts of social capital has also been a focus of the immigration literature. In the United States, education, as a means by which individuals are or have the potential to be mobilized in the social structure has been a focus for various researchers (De Leon, 2005; Kao, 2004; Sum, Fogg, & Harrington, 2002; Valadez, 1996). These researchers have shown rather opposite findings from those of oppositional culture. Their research finds that contemporary immigrants persist in their educational attainment despite some of their characteristics at rates better than their native counterparts partly due to social and cultural capital such as parental involvement, home

language and attitudes (Coll et al., 2002; M. J. White & Glick, 2000, p. 688). More specifically, higher education has the means by which an individual gains access to careers such as medicine and law which provide significantly higher pay scales than other careers therefore further improving ones social mobility (Astin, 1982; Freidman & Krackhardt, 1997; Strayer, 2002). Thus, their college choice, how immigrants mobilize their social capital embedded in their networks and what networks they use in relation to their assessed social capital are important considerations for their social mobility. Research on this subject has considered student and parent place of origin on college attendance and found that students who are foreign born to be more likely to attend college (Ganderton & Santos, 1995). Similarly, Staniec and Hagy's (2002) research helps to shape our understanding of the higher education institutional choice question as it relates to immigrant status and race. Using the National Educational Longitudinal Study (NELS, p. 88), they discovered immigration patterns in the United States both by volume and country of origin not seen since the 1960s and discuss the lack of research being completed on these immigrants and their educational choice. Staniec and Hagy (2002) speculate the choices of immigrant children have a direct impact on their potential role in the U.S. economic future. In other words, the educational successes of immigrant children will be the success of the United States. In addition, researchers concerned with migration have noted current statics that show a large number of immigrants constitute the United States' current and future labor force (Sum et al., 2002, p. 2). This work is important because it expands upon early and more limited research (Vernez, Abrahamse, & Rand Corporation., 1996). In addition, it explores enrollment choices across racial/ethnic subgroups and different types of institutions (Staniec & Hagy, 2002, p. 390). Their findings suggest that first-generation (foreign-born) immigrant children that have graduated from high school are significantly more likely than their native-born counterparts to

enroll in all institutional types except private four-year colleges. They also found Asian immigrants were more likely to attend four year public colleges and universities and that first generation Asian and Hispanics were most likely to attend two-year public schools. Second generation Asians were still more likely than natives to enroll in public two-year schools, but by the third generation they were similar to Whites in relation to their attendance choices. First generation Hispanics were more likely than native students to enroll in two-year public institutions. The probability of second generation Hispanics to attend both four year private and public institutions is increased. My research will focus on immigrants who have chosen three different paths of higher education (community and four year senior colleges).

Similar to other areas of research, immigration scholarship currently lacks consideration of cybernetworks. Therefore, it would be useful to understand how and if cybernetworks are being adopted and its' implications for the degree of educational attainment (two year, four year) sought by immigrants versus native students.

2.3 SUMMARY

This chapter has covered Lin's perspective of social capital theory which he explains by the action aspect of social relationships or mobilized social capital. From Lin's perspective, I am able to explore the various relationship structures involved between students and their networks; how they are interacting through the various traditional and cyber- communication methods to access information for their college search and selection process. In addition, it gives me the context to consider the final college choice or their action associated with these relationships. Although all of the social capital propositions and postulates are useful and will be used in my

dissertation to situate this decision process into the theory, I will focus on the strength-of-position, strength-of-strong-tie and strength-of-weak-tie propositions.

The findings of this dissertation also add to the literature that studies cybernetworks in relation to social capital theory, college search and selection research, educational attainment and issues such as the social mobility of immigrants. It adds to social capital theory by including cybernetworks that Lin speculates to provide equalizing opportunities for disadvantaged groups such as immigrants. It provides current and more in-depth consideration of how students are using traditional and cyber communication with their formal and informal networks in the college search and selection process. In addition, it provides evidence about immigrant students' college search and selection networks/information and its impact on their two-year and four-year enrollment trends. Finally, this study adds to the immigrant social mobility research by considering the relationship between the various networks studied and the immigrant students' perceptions of their own social mobility based on the completion of the degree that are seeking. Therefore, this chapter provides an understanding of the current theoretical and research context with which this dissertations finding are discussed.

3.0 CHAPTER

SOCIAL NETWORKING FOR COLLEGE SEARCH AND SELECTION

This chapter provides a brief overview of the study including the issues and guiding research questions; rational and importance of the study and methods used to complete the study. The research methods for this dissertation follows a three-step process that included archival data analysis with three randomly selected Mt. Holyoke College chat room transcripts; six on-line focus group interviews of 21 first year students 18 year of age or older from City University of New York (CUNY) two-year and four-year colleges; and one on-line survey distributed to 9,240 CUNY first year students 18 year of age or older. The specifics of college selection, study's participants, advisory committee, instruments used, pilot study and IRB approval process are reviewed as well.

3.1 STRATEGIC ISSUES AND HYPOTHESES

The first hypothesis is that students communicate (cyber- compared to traditional methods) differently with formal and informal networks in their college search and selection process. Cybernetworks occur in an environment that is characteristically different than the traditional network environment where there are significant resources, various information channels, immediate exchanges between individuals, and possibly a reduction of power by those in more advantaged social positions due to place of origin, class and race (Lin, 2001a). As such, it is possible to conceive that cybernetworks could result in an equalization of opportunity in access to social networks as suggested by Lin. Furthermore, education researchers have found that both formal and informal traditional networks are viewed as important to providing students

information/resources for their decision to attend college, therefore it will be essential to understand if the cyber-versions, which appear to be on the rise in number and in use, are being used in similar or different ways by native and immigrant college bound students (King et al., 1986). My second hypothesis is that formal and informal cybernetworks are essential networks for the college selection process. My third hypothesis is that immigrant and native students differ in their use of cyber- and traditional communication with their formal and informal networks during the college search and selection process.

The hypothesis for my second research question is that the uses of cybernetworks by immigrants have implications for college choice and social mobility. Most research on social networks indicates that immigrants and minorities tend to have weak or no networks that can help inform and ultimately improve their options for college attendance (Staniec & Hagy, 2002). However, Lin (2001a) suggests that current research lacks a fuller consideration of current development of cybernetworks which may alter our understanding of how individuals access various forms of mobilized social networks in order to build their social capital.

The postulates and propositions of social capital as proposed by Lin will be used to situate the findings of the research questions and hypotheses into the theory of social capital and how the inclusion of cybernetworks challenge and/or support these concepts.

3.2 RATIONALE FOR THE STUDY

There are several reasons for this study. The first is to fill in the gaps of college search literature. The study does this by attempting to find possible new formal and informal networks; exploring various cyber-methods of communication like email, blogging, chat/IM, etc., used by and important to students in their college search and selection process. It incorporates both formal

and informal networks into one study as well as a current and complete list of various cybernetworks used by students presently searching for colleges. Finally, this study provides additional data and findings to the research which has proven to be inconclusive.

The second rationale for the current study is to examine specific propositions and postulates developed on social capital in relation to the analyses completed. The examination is important as the current propositions and postulates have been developed from the analysis of traditional in-person relationships and void of cybernetwork considerations. Including cybernetworks challenges and supports some of these aspects of social capital theory.

Finally, the central focus of my study is on disadvantaged immigrants that constitute a large portion of college bound students in the United States. Researching their use and rating of these constantly evolving cybernetworks in their college search and selection process will further our understanding of the equalization of opportunity and/or replication of the social divide found with more traditional social networks. This analysis will also add to the college search literature and social capital theory as well as inform the future technology development and how it might address the lack of information among disadvantaged groups such as immigrants. As Coleman (1994) and Lin (2001a) suggest, this type of research is critical to a broader understanding of how individuals satisfy their interests in a social system which helps to better shape social network and social capital theory.

3.3 METHODS

This section explains the rationale for selecting the CUNY system to study the above stated issues and hypothesis. It will also provide specifics as to the selection of college chat room transcripts and student participants for the online focus groups and survey. A brief description of

the advisory committee formed to provide critiques of the instruments used and guidance for statistical analysis and interpretation are covered. Finally, the necessary IRB steps for CUNY and The University of Pittsburgh as well as the specifics of the various instruments and software used to collect and analyze the data are discussed.

3.3.1 College selection

The City University of New York (CUNY) system was selected for several reasons. First, the CUNY system has both two-year and four-year colleges and therefore provided a higher education system whereby both types of student's college choices could be studied. In addition, because the tuition for either of these types of colleges in CUNY is the same it greatly reduces the impact of this financial consideration that has been shown to influence college choice in the literature review. Therefore, first-year students from Brooklyn College, College of Staten Island, Queens College, Kingsborough Community College, and the Borough of Manhattan Community College were solicited to participate in the focus groups and the on-line survey portions of this study.

Second, the CUNY student population was suspected to provide a significant degree of immigrant students because of its locations throughout New York City and low tuition. As a result, the volunteers contained a high percentage of both immigrant and native students from various SES backgrounds. The location of the CUNY colleges in relation to my physical location in New York City allowed the author to provide in-person contact with participants when necessary and kept the study within my tight budget constraints. Finally, as the former Vice President for Enrollment Services at Brooklyn College, CUNY, this provided me a personal connection with and support from the central administration to conduct this research.

3.3.2 Study participants and procedures for obtaining data

There are three categories of participants in this research. Those used in the chat-room transcript research, the students interviewed in the on-line focus groups and the on-line survey volunteers.

The chat-room transcript analysis consisted of three randomly selected Mt. Holyoke College transcripts from the 2007-2008 academic years. There were a total of nine transcripts available from fall 2007 (2 transcripts), winter 2007 (2 transcripts), spring 2008 (2 transcripts). One transcript from each period was randomly selected to cover the entire college search and selection period. No specific characteristics were known about the students who participated in these chat-room sessions other than their screen name and that they were prospective Mt. Holyoke College students. It should be noted that other attempts were made to obtain a greater variety of college chat-room transcripts. Three periodic emails were sent to the National Association of College Admissions Counselors (NACAC) LISTSERV.[15] This yielded the Mt. Holyoke College chat-room transcripts. Several individuals in the higher education marketing industry at Carnegie Communications, Performa Higher Education and SimpsonScarborough, Inc. were requested to identify any known clients that were retaining their chat room transcripts for analysis. A "Google search" was preformed to identify any Web site which provided college search assistance, used chat and posted those transcripts on-line. Finally, The College Board's college search tool was used to locate 121 colleges within a 25 mile radius of the New York City area (see Appendix A). All Director of Admissions were contacted by phone and/or email to request their chat-room transcripts. The Google search, higher education marketing company request and TheCollegeBoard.com search yield no additional transcripts. Therefore, content analysis was completed on the Mount Holyoke chat sessions text only.

[15] LISTSERV is an automated mailing list manager developed by Eric Thomas in 1986. He developed the software now known as LISTSERV.

An email invitation to participate in one of seven on-line focus groups was sent using the Surveymethods.com survey launch tools to all first-year students who were age 18 or older (N = 9,262) at the five CUNY colleges (see Appendix B). The Office of Institutional Research at the CUNY provided the names and email addresses of their first-year students. The Surveymethods.com survey launch tool also sent three periodic reminders to non-respondents requesting their participation. Students were requested to register their willingness to participate by completing a short survey about themselves (see Appendix C). Any student that partially completed the initial survey was sent a reminder to complete it as well. In the short survey, they were asked to indicate their race, SES, gender, high school average, place of origin, college generational status and their CUNY College of choice. This step was completed to ensure that the participants represented as diverse a student group as possible that would result in a more comprehensive perspective of cybernetworks use by current college bound students. However, it should be noted that students participation in the focus groups were not controlled by any of these factors since it was not conducted to understand differences between or among groups nor to be representative of any particular segments of students. Initially, each focus group was limited to 10–12 students to allow for maximum participation by each student but also was large enough to facilitate collective thought. All volunteers were sent an email confirmation (see Appendix D) and reminder two days prior to their focus group date. In addition, they were phoned 2 hours prior to the start of each session to insure the maximum participation for the focus groups.

The same CUNY students (N = 9,240) solicited for the on-line focus groups minus those who requested to no longer be contacted were sent another email from Surveymethods.com survey launch tool asking them to participate in the online survey (see Appendix E). In addition,

a Respondent Driven Sampling (RDS) technique was used by asking students to provide additional personal emails and names of fellow CUNY first year students to take the survey (Wejnert & Heckathorn, 2005). Three periodic email reminders were also sent to the students who did not respond to the initial request (see Appendix F) as well as prompts to complete the survey for any student that had started it but did not complete the whole survey. These reminders were all sent through the SurveyMethods.com survey launch tools.

3.3.3 Advisory committee

I organized an advisory committee for this study, which consists of individuals from Hobson's, Performa HE, SimpsonScarborough Inc., Carnegie Communications, and Dr. Jerald Mirotznik, Ph.D., MPH, Brooklyn College Associate Provost, Dr. David Crook, CUNY University Dean for Institutional Research & Assessment and Dr. Cheryl Littman, Assistant Dean for Institutional Research & Assessment.

The individuals from the various companies reviewed all invitations, questions and survey instruments as well as all functionality of the on-line instruments prior to their launch. Performa HE provided access to their FreeConference.com account for the focus groups. In addition, they provided strategic recommendations for the days and times to launch my participation requests; hold focus groups and all follow up procedures that would ensure the maximum participation from the invited students. Drs. Crook and Littman provided assistance with the data set selection parameters and general research design. Dr. Mirotznik provided guidance for the use of SPSS and the statistical analysis and interpretation of on-line survey results.

3.3.4 Instruments

This study used a mixed-method approach for the purpose of informing the development and explanation of the survey instrument (Sandelowski, 2000) and follows the field's accepted constructs for observations[16] and field notes.[17] In addition, the process for the formation and execution of each part of the project primarily followed the recommendations of Gay (1987).

First, archival analysis of the research literature provided this study with an initial list of formal and informal networks as well as cyber- and traditional methods of communication. In addition, the transcripts of Mt. Holyoke College chat-room sessions representing both the search and selection periods from a college Web site were gathered. Content analysis was performed by me on these transcripts with the use of NVivo qualitative analytical software.

The on-line focus group provided insight as to the use and types of current cybernetworks for CUNY students in their college search and selection process. An interviewer guide and Microsoft PowerPoint™ presentation were developed based on the results of the literature review and NVivo archival analysis results. The technique used was a semi-structured approach involving the asking of structured questions followed by clarifying unstructured or open-ended questions. The interviewer guide and Microsoft PowerPoint™ presentation is located in Appendix G. These on-line focus groups were conducted using Microsoft LiveMeeting™ software and a toll free 1-800 number through FreeConference.com.[18] This technology allowed

[16] Selltiz, Wrightsman, and Cook (1976, p. 252) indicated that in order for observation to be a tool of science it must serve a formulated purpose; be based on dimensions grounded in previous research and theory; be utilized systematically; and be subjected to reliability and validity checks.

[17] Spradley (1979, pp. 75-76) recommends that observations should record four kinds of field notes. They are condensed accounts of activities or conversations observed; expanded accounts of activities or conversations recorded as soon as possible after each field note session or observations; a field work journal of experiences, ideas, fears, mistakes, confusions, break-throughs, and problems that arise during field work; and a provisional running record of analysis and interpretation of observations and other field work data.

[18] Since the conference call recording service required most eligible participants to make a toll call, a toll free number was established to eliminate those costs on students and maximize their participation.

questions and concepts to be visually displayed for the participants that were being discussed. In addition, it captured audio recordings of the conversation that were later transcribed and analyzed by me using NVivo qualitative analytical software. I completed all coding of the data to ensure consistency and reliability in the results. The transcriptions were coded into the NVivo software by focus group rather than as individual students within a focus group. This was decided because it was not the intent of the focus group analysis to discover the particularities of each student, but rather to examine the content of the discussions in each as a whole.

An on-line survey (see Appendix H) was developed for participating students from the results of the archival and on-line focus group results and followed Fowler's (1993) book on survey research methods and how to construct the survey instrument. It was constructed and distributed to the population through the use of the Web site and software; SurveyMethods.com. Content validity for the on-line survey was conducted by allowing three field experts from three different educational research companies[19] to independently review and give feedback. Additional guidance was given by these companies as to the appropriate day and time of day the survey was launched in order to solicit the best response. These days and times were based on their collective experience of having launched over a thousand successful on-line surveys. All data was collected and down loaded from SurveyMethods.com. It was then up-loaded into SPSS software for analysis. I use measures of correlation, statistical significances and linear relationships to analyze the appropriate responses from the online survey to answer the stated research questions and hypotheses (Eichelberger, 1989; R. S. White, 1985). More specifically, to test the first hypothesis I compare the *use* of cyber- and traditional methods of network

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FreeConferenceCall.com allowed for all callers to hear one another and confirmed who was in the room to the interviewer as well as an indication as to who was talking when.

[19] SimpsonScarborough, Inc., Carnegie Communications and PerformaHE companies were each given the survey instrument to comment on flow and content. All appropriate changes were made to the instrument prior to the pre-test and final execution of the on-line survey.

communication student's use with their formal and informal networks. I also analyze the relationship between the student's *rating* of formal and informal networks using both cyber- and traditional communication methods during the search and selection process. Next, I use similar analyses as the first and second hypotheses but separate the responses by the student's place of origin (native or immigrant) for comparison purposes. Finally, to investigate the second research question, I analyze the cyber- and traditional network use of immigrant students compared to natives in their college selection process and its correlation with their choice to attend a two year or four year college. Further I correlate their use of cybernetworks with their perspective of degree attainment and their improved SES (social mobility).

Finally, a Web site, www.cybercollegesearch.weebly.com, was constructed for this research for several purposes. First it allows me to provide student participants in the study a short electronic invitation to the various study opportunities. Short emails roughly the size of a 15 inch computer screen has been proven to increase the number of potential participants who read the entire electronic invitation and therefore the probability of their participation. Second, the Web site provided more in-depth information about the intent of the research and therefore allowed for all IRB rules and policies involving human subjects to be followed without decreasing the impact of a short electronic invitation to the potential participants. Finally, in keeping with the IRB theme of benefits to participants, the Web site allowed for the creation of a free on-line college search resource for all students who connected to it.

3.3.5 Pilot test of study instruments

Prior to the first focus group session with the targeted population, a pilot test of the on-line focus group was conducted with a small group of first year college students age 18 or older found through various personal contacts but who were not currently attending a CUNY college. This

was completed to refine the questions for greater clarity and ensure the ease of technology use by the researcher and participants alike. The Microsoft PowerPoint™ presentation used to guide students visually through the focus group and the moderator guide (see Appendix G) were then altered accordingly after the pilot test.

A pilot survey was also administered to a random sample of the CUNY student database (n = 2,500) to ensure that the questions elicited the appropriate responses for the on-line survey. This was administered after final reviews of the instrument were completed by the advisory group. Individual as well as group responses to the survey were analyzed to ensure several things. The individual results were reviewed for students' ability to complete the survey in a reasonable amount of time and would not inhibit participation. The groups' responses were also reviewed to ensure that students were able to select various answers for each question. Students were also given my personal email address and phone number to contact me regarding any broken links or functionality issues with the on-line survey software. All issues were addressed prior to the release of the final survey.

3.3.6 IRB approval processes

I completed the IRB coursework for both the University of Pittsburgh and The City University of New York (CUNY). This study met the requirements of both institutional review boards and its' participating schools (see Appendices I and J). In addition, once constructed the on-line survey was submitted and approved by CUNY and the University of Pittsburgh Institutional Review Board (IRB). All potential participants were verified by CUNY Institutional Research as 18 years of age or older. Participants were also given several messages pointing them to the rules and regulations regarding their participation which were posted on the Web site [www.cybercollegesearch.weebly.com] created for this research project. All focus group

participants were prompted to acknowledge the recording of they had read the participation information provided in their email and on the Web site explaining the study and use of their responses by pressing "1" on their phone in order to enter the conference call. Interviewees for the focus groups received $25 gift cards for their participation and were given a toll free 800 number to call so as to not incur any phone charges. Students that completed the on-line survey were entered into a drawing for two $100 gift cards. Two student participants were chosen randomly by an advisory board member to receive the gift cards. At the end of both the focus group and the on-line survey, students were directed back to the research Web site for further information and to access resources posted on this site regarding college search and selection guides and information to assist them or their networks in the future.

3.4 SUMMARY

This chapter has covered the methods of analyses that are used in this study. The methods of this study provide this research with more current networks and their use among college bound students by analyzing current documents such as chat room transcripts and on-line focus groups to construct an on-line survey. These more current networks and communication methods will produce more current and meaningful results from the online survey. In addition, the description of the participating colleges and participants frames the types of students and colleges in which they are enrolled as well as the issues and limitations that should be considered in the interpretation of the results. The appropriate steps for securing IRB approval from both the University of Pittsburgh and The City University of New York are covered. Finally, the linking of social capital theory to the use of the cybernetworks is reiterated. In sum, the preceding section provides the process by which I collect both historical and current data to answer the

research questions, define the population researched and the tools and theory to complete the analysis.

4.0 CHAPTER

DATA ANALYSIS AND FINDINGS

Two major research questions were posed at the beginning of this study. First, how do students use traditional and cyber- communication methods with their formal and informal networks in the college search and selection process? Second, does the use of cybernetworks provide students an improved understanding of their college options as measured by the type of college (two-year/four-year) and is there a relationship between the use of cybernetworks and students perception of their social mobility? Social mobility is measured by their agreement with the notion that their degree sought will improve their current SES. Social capital theory, specifically the strength-of-position and strength-of-tie propositions are used to explain the data analysis. In addition, the assumptions put forward by Lin in relation to the incorporation of cybernetworks will be addressed as a main focus for this study. Finally, related research concerned with the college search and selection literature, educational attainment and the perspectives of migration and migration social mobility will be referenced where relevant in relation to the findings.

4.1 VARIABLES EMERGING FROM THE LITERATURE

As discussed more extensively in the literature review section, historical research revealed several factors such as SES, academic ability, family structure and support and place of origin as variables which are considered by social capital literature. These variables were incorporated as questions in the on-line survey so that the data analyzed for my research could consider their relevance with the current studies analysis of formal and informal social networking by college bound students through traditional and cybernetworking methods of communication.

4.2 CHAT ROOM CONTENT ANALYSIS

The analysis from the NVivo coding for the three Mount Holyoke transcripts shows common themes similar to the literature review as well as presenting some new topics. Content analysis revealed the frequency and depth of the tree and free nodes identified and associated with this form of a cybernetworks. Appendix K is a summary report of all tree and free nodes which were identified in the three randomly selected transcripts evaluated from this college during the 2007–2008 enrollment cycle.

Tree nodes identified general topic areas around the information that students sought. These areas were academics, application processing, educational outcomes, financial, institutional characteristics and student affairs (see Appendix L). Each of these topic areas were further refined. The academic node consisted of several areas of information being sought. These were academic readiness; whether the student was prepared for the study of a particular program, classroom atmosphere, degree requirements; other potential academic opportunities available at the college; and the strength and popularity of the academic program in question. The application processing node consisted of three areas of information. These were the admissions application components, a student's chance of being admitted to the school and the importance of academics in the admissions decision. The educational outcomes node consisted of issues about career opportunities, monetary or SES results from obtaining the school's degree and finally the network provided to graduates upon completion. The financial aid node was related to the cost of the school, employment opportunities while in college, various types of financial aid available and finally the availability and types of scholarships. The institutional characteristics node comprised information sought about alumni, the college reputation, the faculty, the surrounding geography of the college setting, the physical plant of the college, other prospective

students and the current student body. Finally, the student affairs node represented the topics of residential life, student activities and support offered to students. As mentioned, this exercise was to gain a better understand of the types of information that students were seeking through cybernetworks. Therefore, the coding had revealed these topic areas as the types of information they were seeking.

After the nodes were identified, a query was performed on the number of recorded instances for each across the transcripts. The results produced a list of the most and least sought information by students that participated in these chat rooms. Both application processing and institutional characteristics nodes resulted in the highest instances with 79 and 77 respectively. Within the application processing node the most frequent focus was on information pertaining to the admissions application itself (71 instances). The information most sought regarding the institutional characteristics was the tree node regarding the college and its reputation (37 instances) as well as the students (49 instances). The third most important tree node established across the transcripts was information on academics (55 instances). Within the academic node the two prominent tree nodes associated with it were other academic opportunities available to students (28 instances) and information on the strength and popularity of the major both on and off campus (22 instances). The fourth most sought tree node information was related to student affairs topics (42 instances) with student activities (25 instances) being the highest noted tree node within the student affairs node. The important node was the financial information (22 instances) and was almost equally spread among the associated tree nodes for cost (10 instances), financial aid (13 instances) and scholarship (11 instances). Finally, the node for educational outcomes was the least recorded topic with 5 instances with the highest corresponding tree node being career options for students after attending the college.

These tree nodes all fall within the topic areas studied and revealed in the literature review that consist of information important to some if not all groups of students when making their decision about where to go to college. However, additional free nodes were also recorded throughout these transcripts that may offer us topic areas not always considered in the review of national data set analysis. The free nodes representing the topic areas were students' attempts to express emotion in the cybernetwork (11 references), evidence of communications barriers resulting from the cybernetwork mechanics or the general meaning of terms (28 references), students seeking to confirm truth of information (7 references), seeking expert information (1 references), attempts to establish trust (36 references), conveyance of varied fears (18 references), general support (7 references), technical issues (11 references) and ability to determine if they will fit (56 references). The top three topics represented by free nodes that students chatted about were their ability to fit in at the college; the establishment of trust with the other chatters in the virtual room and communication barriers with others.

Therefore, these findings further supported the variables already determined to be used in the on-line survey as well as for the free nodes, providing some additional variables to be collected.

4.3 ON-LINE FOCUS GROUPS ANALYSIS

Based on prior studies about social networks covered in the literature review and the NVivo software analysis from the chat room transcriptions, questions for the focus group were constructed to clarify and further explore the types of informational channels that were accessed and/or supported by students. In particular, I sought to determine students' *current* perception of positive and negative influence from formal and informal information channels accessed in the

college search and selection process. Three significant areas were explored in relation to cybernetworks and our consideration of them as social networks. These areas were: (a) as a source of social control; (b) as a source of family support; (c) as a source of benefits through extra-familial networks. The concept of a source of social control was explored through questioning student use of newly formed social cybernetworks such as chat, Ning.com, Facebook, MySpace, etc. which they joined specifically for the college search process. As a source of family support, students' use of email and IM with family members and other informal networks were explored and finally as a source of benefits through extra familial networks, I explored their use of online resources provided by colleges, The College Board, Hobson's and various other sources.

The 9,262 students that were emailed to participate in this part of the research resulted in 146 responded or a 2% response rate. Ninety students responded favorably to the email request. The results of this qualification survey are located in Appendix C. Of those 90 students, 64 students fully completed the qualification survey. All students who either completed the whole survey or partially completed it were asked to be a part of the focus groups. Of the 90 student who were invited to participate, 21 showed up at their respective focus group. The 21 students represented a very diverse group of students. The final participants consisted of 7 males and 14 females. The ethnic breakdown of the group consisted of 11 White/Caucasians, 5 Asians, 2 Black/African American and 3 Hispanic/Latino students. Twelve of the students were native to the United States and 9 were immigrants. The immigrant students were from France, the Commonwealth of Dominica, Russia, India, Bangladesh, Ecuador, Haiti, Israel and Belgium. Of the 21 students, 9 represented the first generation in their family to attend college. All U.S census socioeconomic status (SES) categories were also represented. Eight students indicated that they

did not know the yearly income of their family, 2 were from the upper/middle class ($100–349,999 SES range), 2 from the middle class ($65,000–99,999 SES range), 3 from the lower/middle class ($35,000–64,999 SES range) and 6 from the lower class ($34,999 and below SES range). One student indicated having a D high school average, 4 reported a C average, 8 B averages and 8 A high school averages. Four students were currently enrolled at the Borough of Manhattan Community College, 3 at Kingsborough Community College, 4 at Queens College and 10 at Brooklyn College. Although the final group of participants was not as large as desired for this portion of the project, the resulting group of students was very diverse by all data indicators collected and would provide diverse insight as to the use of information and networks by CUNY prospective students.

The overall goal of the focus groups was to understand the ways and extent to which students used and incorporated cybernetworks in their college search and selection process. Therefore, the following section covers several node charts that codify the student's conversation in relation to this subject. *Figure 2* represents the node analysis for Focus Group #1. In Focus Group 1 there were 42 instances where specific sources were specified by the group of students as having been accessed during their college search. These sources included people either known to them prior to the college selection process, new to them specifically for this process, any source accessed via the Internet and paper publications and brochures. *Figure 3, 4, 5,* and *6* represent the node coding for Focus Groups #3, #4, #5 and #7 respectively all show similar patterns of node and sub-node instances as annotated in the NVivo qualitative analytical software. Here the node representing *Internet Sources* takes a primary role in the conversations for each Focus Group. With the exception of Focus Group #1, all other Focus Groups display *Web sites* as the second most recorded source discussed by the students and then *New Social*

Networks (established via the Internet), *Previously Known Individuals* (in person contacts) or *Established Social Networks* (contacted through the Internet) interchangeably as the third most discussed by the students depending on the Focus Group in consideration. The review of these charts does not provide definite answers to our research questions however; it was not the intention of the focus groups to do so. These discussions took place to identify new sources accessed by the participating students in their college selection and to confirm those identified in previous research. For these charts, it is the number of instances that the sources were mentioned in all the conversations that indicate that the Internet and its various applications is among the most used sources by the students in their college search and selection process.

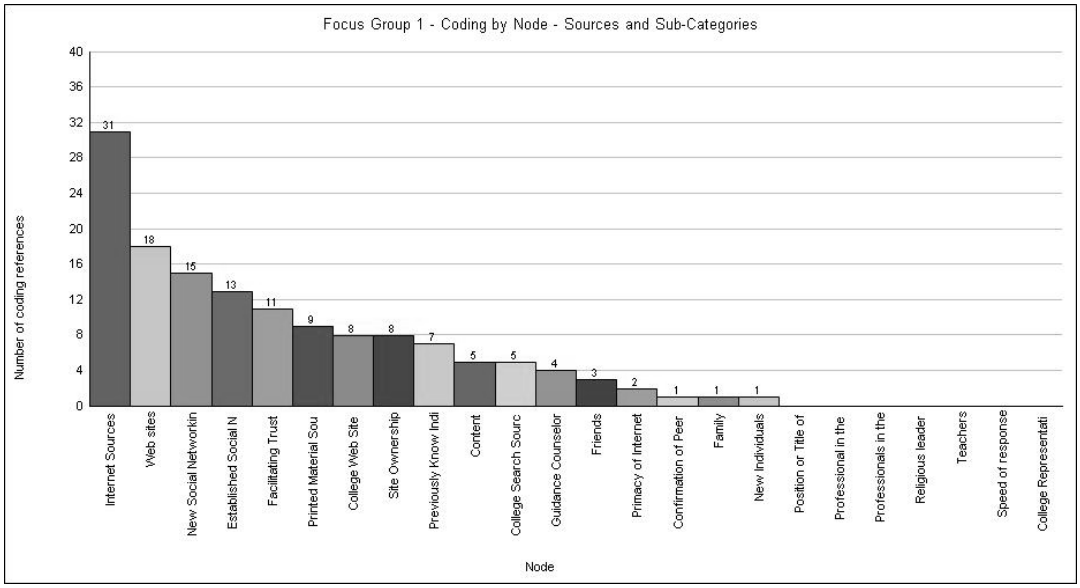


Figure 2. Focus group #1 coding by node – all.

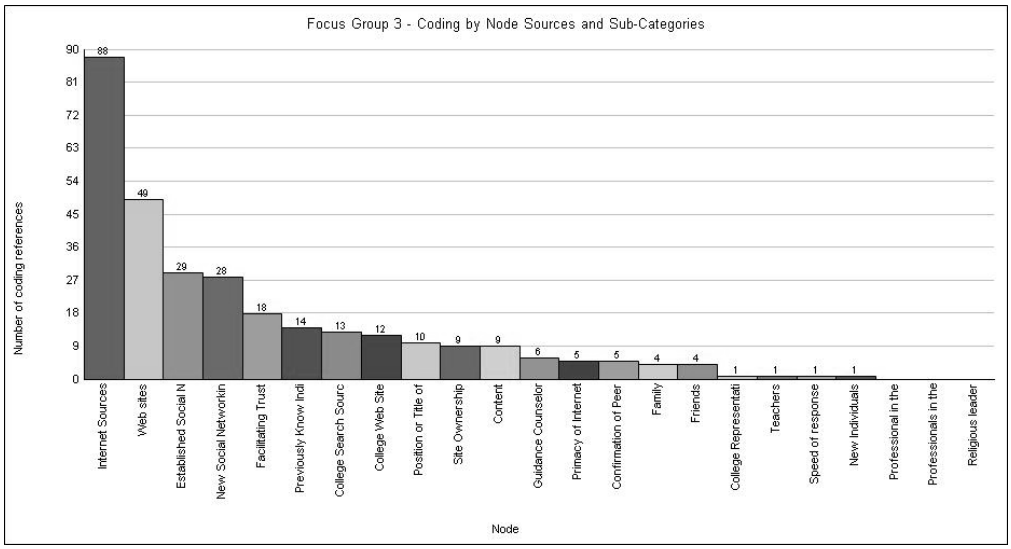


Figure 3. Focus group #3 coding by node – all.

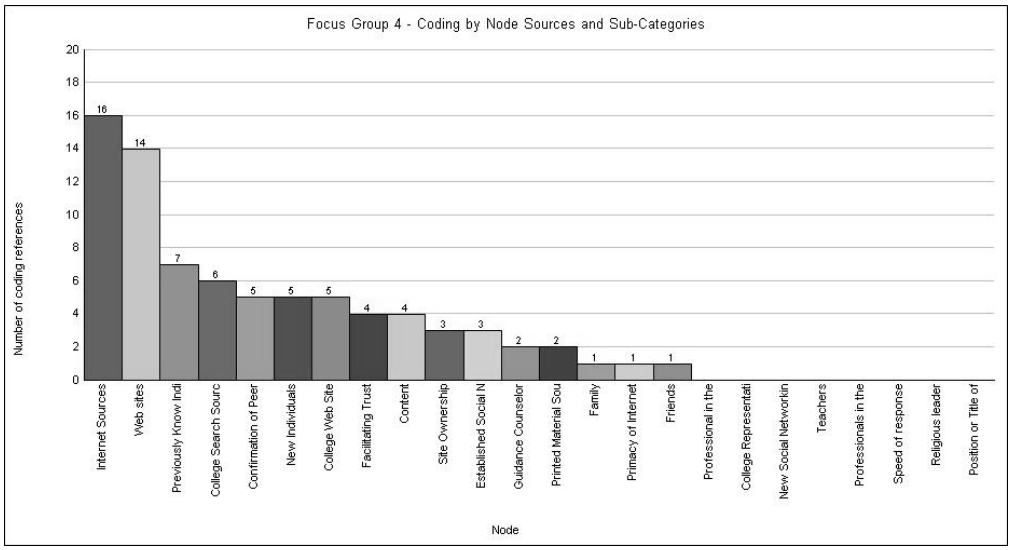


Figure 4. Focus group #4 coding by node – all.

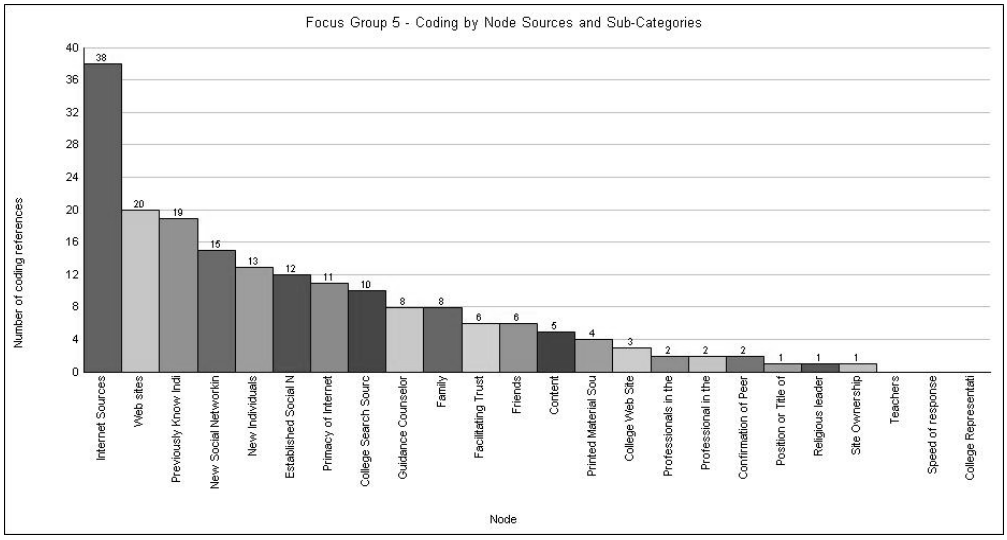


Figure 5. Focus group #5 coding by node – all.

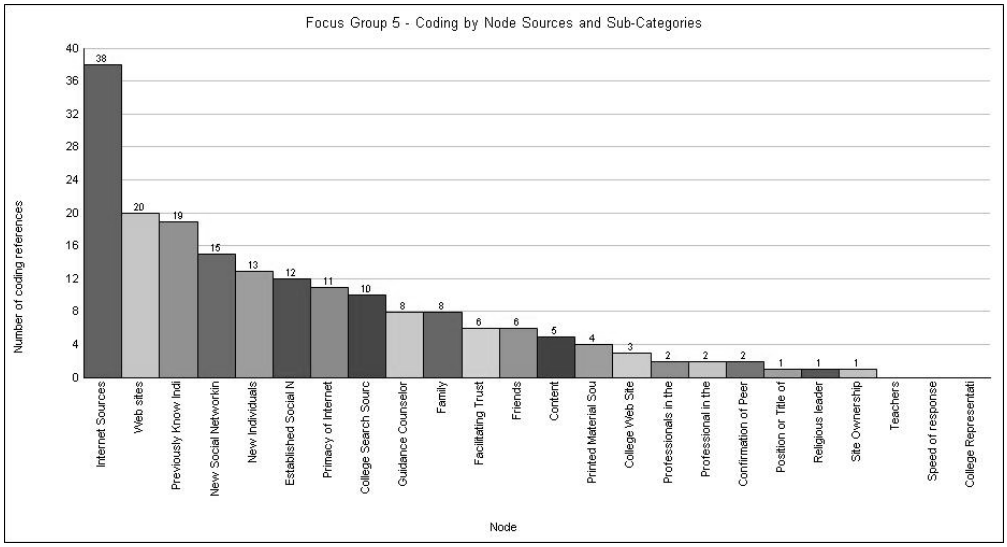


Figure 6. Focus group #7 coding by node – all.

Finally, after compiling the results for all 5 focus groups a total of 250 instances of college search sources were annotated in the transcripts. Among the main sources discussed (*Internet Sources, New Individuals, Previously Known Individuals,* and *Printed Material Sources*) *Internet Sources* elicited the most response from students. This finding clearly supports Lin's assertion that in relation to social capital status today by way of increasing and declining

social networking activity, it is critical that we consider and incorporate into our review the cyber- information channels that provide networking opportunities. Also, the findings add to the Eduventure, Inc research indicating an even greater use of the Internet by students. Further review of the *Internet Sources* category reveals that there was more discussion about static Web sites (101 mentions) as a source, followed by establishing new networks (58 instances) as well as interacting with established networks (57 instances). This also supports other research findings where the use of college Web sites by students for their information and by colleges themselves as a recruitment tool (Burtnett, 1999; *College Search and the Millennial Generation*, 2007) Following *Internet Sources* and its sub-categories, in-person connections with people previously known to the student were cited 47 times and therefore place second among the ways in which students seek information from sources. This also supports the Eduventures (*College Search and the Millennial Generation*, 2007) study where the in-person connection made through the campus visit was very important to the college selection decision of students therefore showing this as a primary traditional information channel. The review of printed material and advertising came in third with 22 instances coded. The establishment of new in-person networks was discussed the least (17 times) in all the transcripts. Viewing the data from this level of analysis confirms again the primacy of the Internet as a source or a means by which to access sources for students in this process. An important finding to note here is the great difference in instances where students' discussed establishing new social networks through the Internet (58 instances) compared to the degree to which they discussed doing this in-person (17 instances). As Lin might suggest, had we not considered the cybernetworks in our research, we might have concluded that students are reaching out to new networks far less than other sources to build their knowledge or social capital about their college search. With its inclusion, not only do we see that

it places higher among the other networks considered here but that students engage with new networks more frequently through the Internet than they do in person. This supports Lin's argument that the cybernetworks need to be considered because the Internet has changed how we communicate and establish networks as did the phone for example. What is not understood is why students prefer this method of communication for new networks to in-person communication, which is used the least. Lin would suggest that this is an example of choice by the student to engage in a network that is void of the social status and norm issues typically found in more traditional networks such as in-person conversations. These networking opportunities represent very different information channels than Coleman considered and in many ways can either contain levels of closure and norms or, alternatively, their absence (Lin, 2001a, p. 81).

As mentioned, the first hierarchical level of coded nodes in these transcripts consists of *Internet Sources*, *New Individuals*, *Previously Known Individuals,* and *Printed Material Sources*. *Figures 7–11* breaks down the frequency with which these sources were mentioned in the respective focus groups thereby revealing the specifics of how this source is used for information or as a means by which students communicate with their sources. Four of the five focus groups show that in-person contact with previously known individuals to be the second most discussed source for students. In-person networks with new individuals was third in three of the five focus groups and last in the two others while printed material was second in one focus group, third in another and last in the remaining three. It should be noted that throughout the focus groups students collectively identified two groups of individuals which they accessed for college search information: college admissions professionals and professionals working in the field of interest to the student. In addition, the category of individuals already known to them was defined as

their family, friends, guidance counselors, professional working in the field, religious leader and teachers. Therefore, this list of individuals became the basic networks to be further researched in the on-line survey.

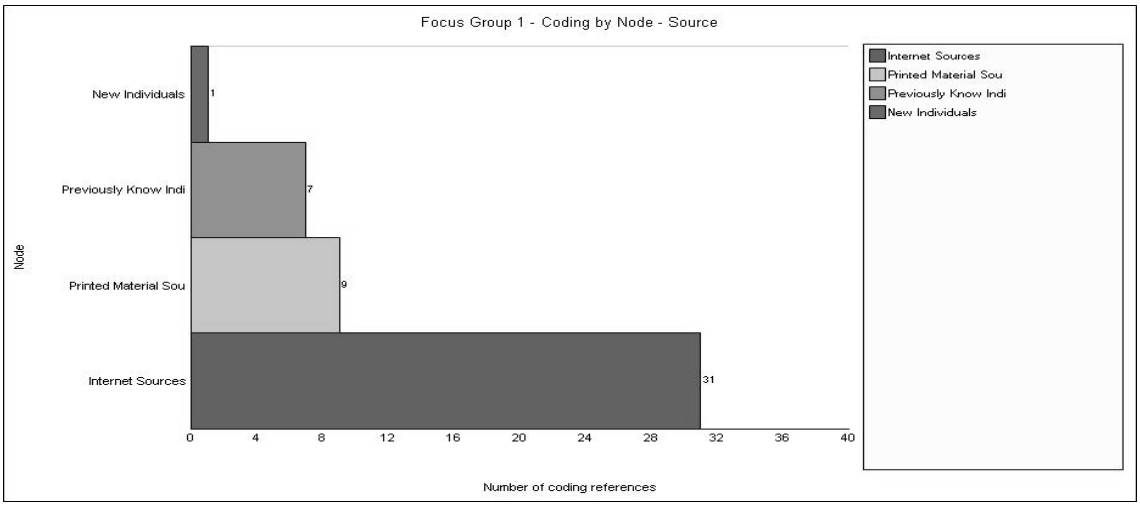


Figure 7. Focus group #1 coding by node – sources.

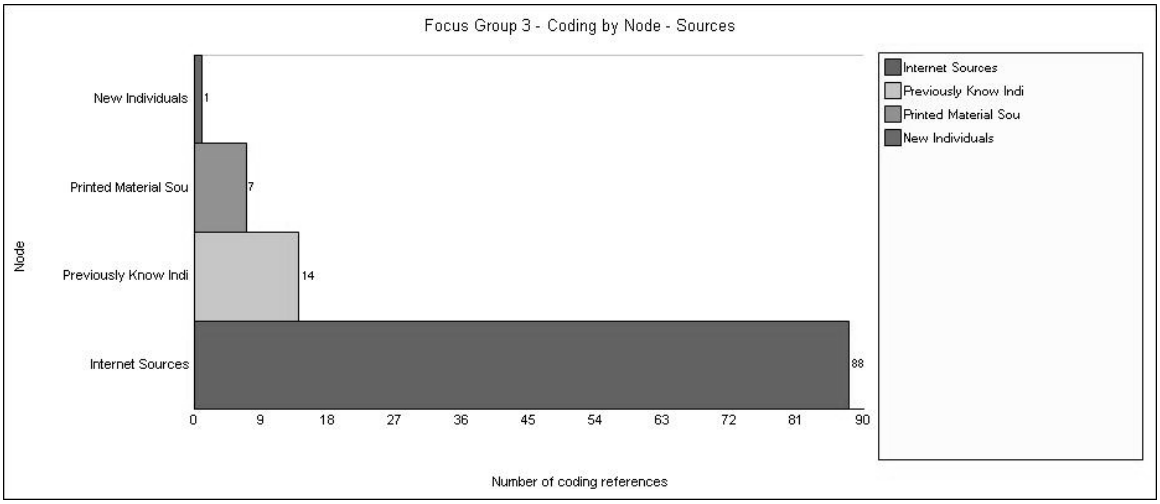


Figure 8. Focus group #3 coding by node – sources.

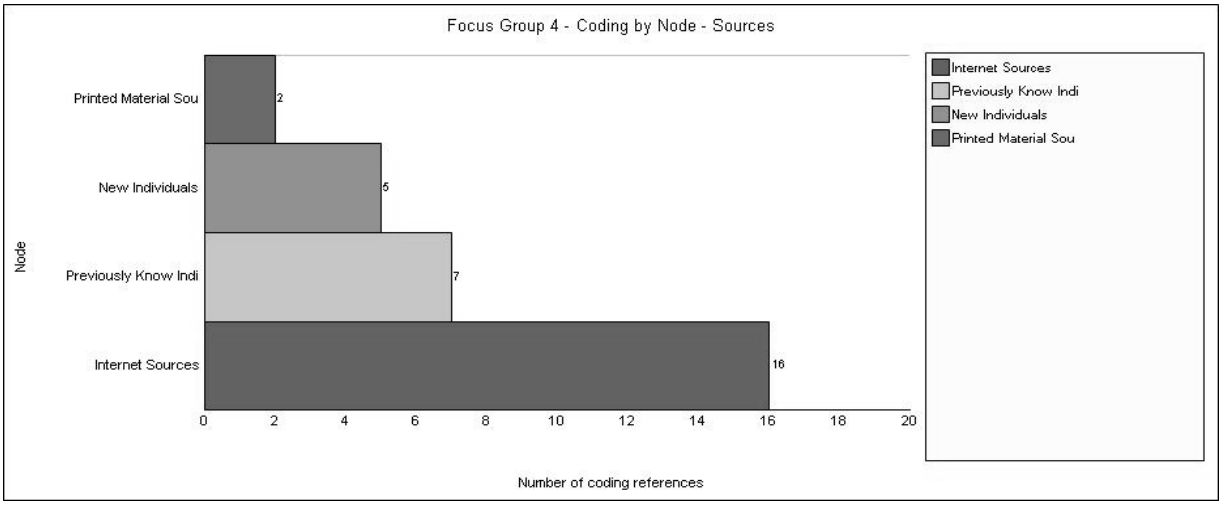


Figure 9. Focus group #4 coding by node – sources.

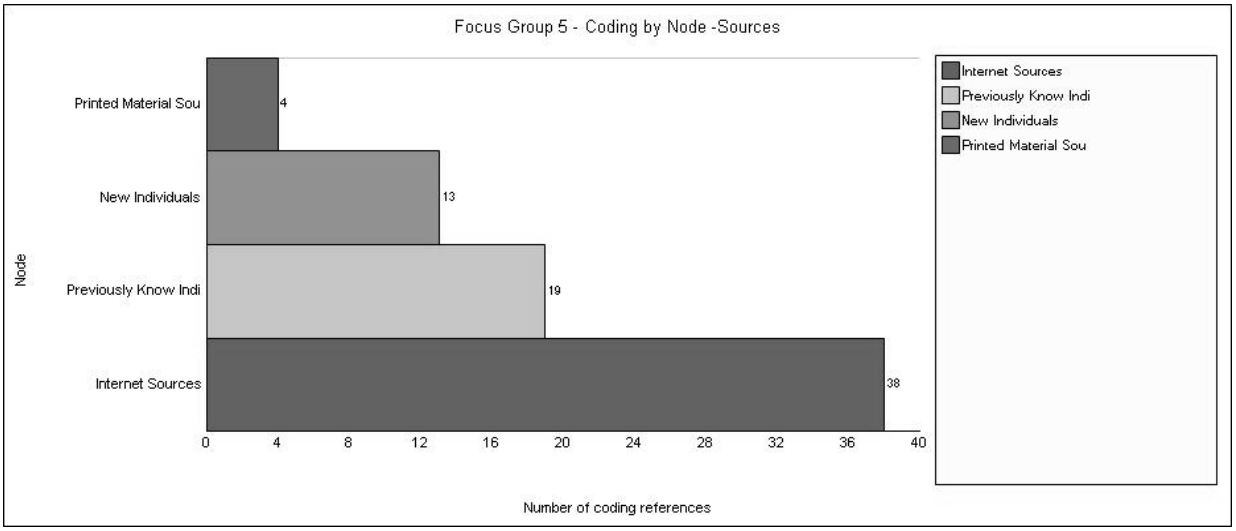


Figure 10. Focus group #5 coding by node – sources.

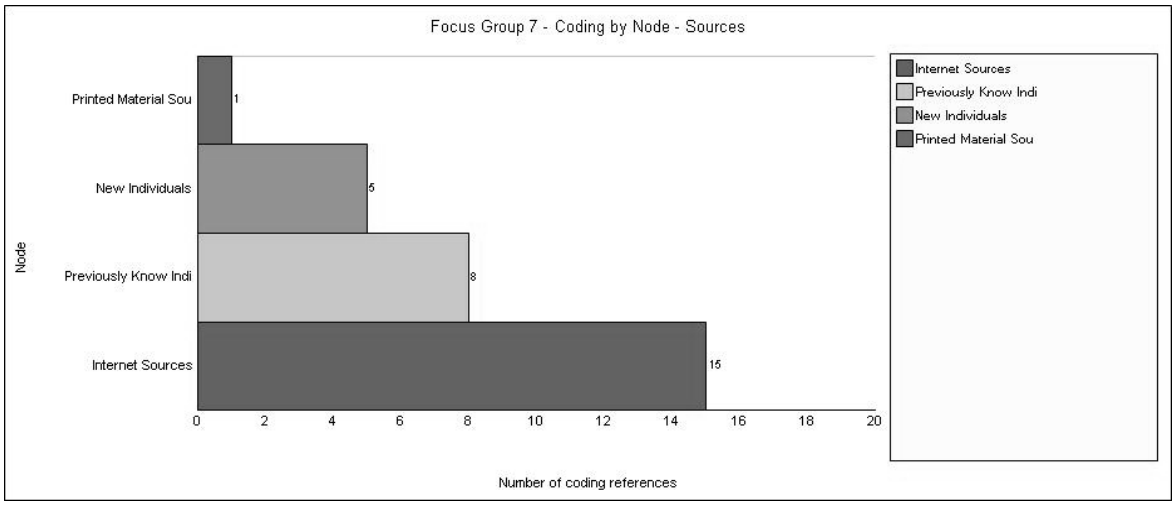


Figure 11. Focus group #7 coding by node – sources.

The tree node summary for sources shown in *Figure 12* shows the overall coding for the five focus groups. The analysis produces a different but similar view of the data as the individual focus group node coding figures that we have just reviewed. Here the data presented in a collective view also demonstrates a similar order of the sources as measured by the amount of discussion the students contributed during the focus groups about each source. One hundred and eighty-eight annotations were recorded for Internet sources, 55 for in-person previously known individuals, 25 for in-person new individuals and 23 annotations for printed materials and advertising.

Node Summary Report

Project: Cybernetworks and the College Selection Process: An inquiry into Immigrant vs. Native Students in the U.S.

Generated: 1/21/2009 2:16 PM

Tree Nodes\Sources\Internet Sources — **Tree Node**

Created On 11/5/2008 3:24 PM **By** BCN

Modified On 12/11/2008 10:59 PM **By** BCN

Users 1

Cases 0

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	5	188	12,551	604			
Total	**5**	**188**	**12551**	**604**			**0**

Tree Nodes\Sources\New Individuals — **Tree Node**

Description People who they contacted specifically for their college selection process.

Created On 11/5/2008 3:24 PM **By** BCN

Modified On 12/11/2008 10:59 PM **By** BCN

Users 1

Cases 0

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	5	25	2,995	150			
Total	**5**	**25**	**2995**	**150**			**0**

Tree Nodes\Sources\Previously Know Individuals — **Tree Node**

Description People sources that they knew prior to the college selection process

Created On 11/5/2008 3:23 PM **By** BCN

Modified On 12/11/2008 10:59 PM **By** BCN

Users 1

Cases 0

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	5	55	4,579	185			
Total	**5**	**55**	**4579**	**185**			**0**

Tree Nodes\Sources\Printed Material Sources and Advertising — **Tree Node**

Created On 11/5/2008 3:24 PM **By** BCN

Modified On 11/14/2008 11:36 AM **By** BCN

Users 1

Cases 0

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	5	23	1,770	81			
Total	**5**	**23**	**1770**	**81**			**0**

Tree Nodes\Sources — **Tree Node**

Created On 10/20/2008 2:27 PM **By** BCN

Modified On 12/11/2008 10:59 PM **By** BCN

Users 1

Cases 0

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	5	274	19,742	904			
Total	**5**	**274**	**19742**	**904**			**0**

Figure 12. Node summary report from NVivo software

Figures 13–17 represent the breakdown of the Internet sources so as to better understand how students engaged with them via the Internet during the college search process. This view shows that students in all focus groups consulted the Internet primarily to gain college search information by reviewing Web sites. As Student 26 stated,

> I used the Internet as a primary source. And it was really helpful because I just went on cuny.edu and then I went to the college. And then, I just researched their academics, their campus life, and all that stuff. And then, I limited down to where I want to go.

Collectively, the focus groups reveal that students used the Internet to access new as well as known cyber- social networks to the same degree (63 instances each). Considering that there were 97 collective instances where students mentioned consulting static Web sites as sources of their college search information, we begin to see how students engage in more person-to-person activity on the Internet compared to gathering information from reading static Web sites. In other words, if we were to combine the number of instances that students referenced these two types of cybernetworks (known and new individuals) it would amount to a greater percentage of the conversation than the use of static Web sites (56% versus 43%). This is also opposite of how they referred to their activity with more traditional in-person sources in the earlier *Figures 7–11*. Here the sum of printed source references was 14, new networks were 24 and known networks were 48. The sum of the total instances was 86. After computing the percentages for these numbers in relation to the total instance annotated, we see that in-person social networking with people either known or new for the student comprises 84% of the coded text compared to 16% for their consultation of paper sources. Therefore, students tended to consult static paper sources less than speaking in-person with either known or new social networks which would appear to be

the opposite but not as extreme a percentage difference when students discussed their actions with similar networks in the cyber- environment.

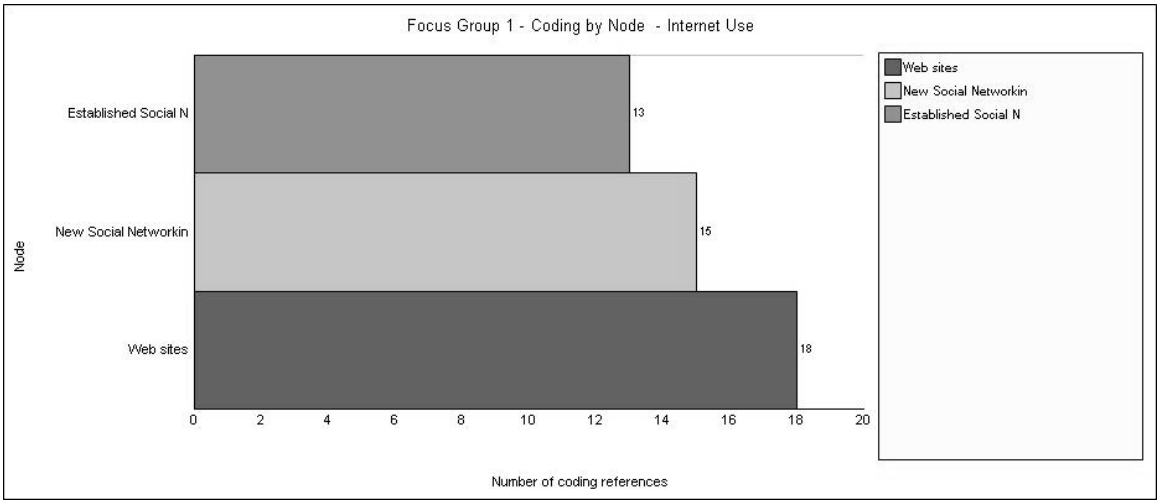


Figure 13. Focus group #1 coding by node - Internet use.

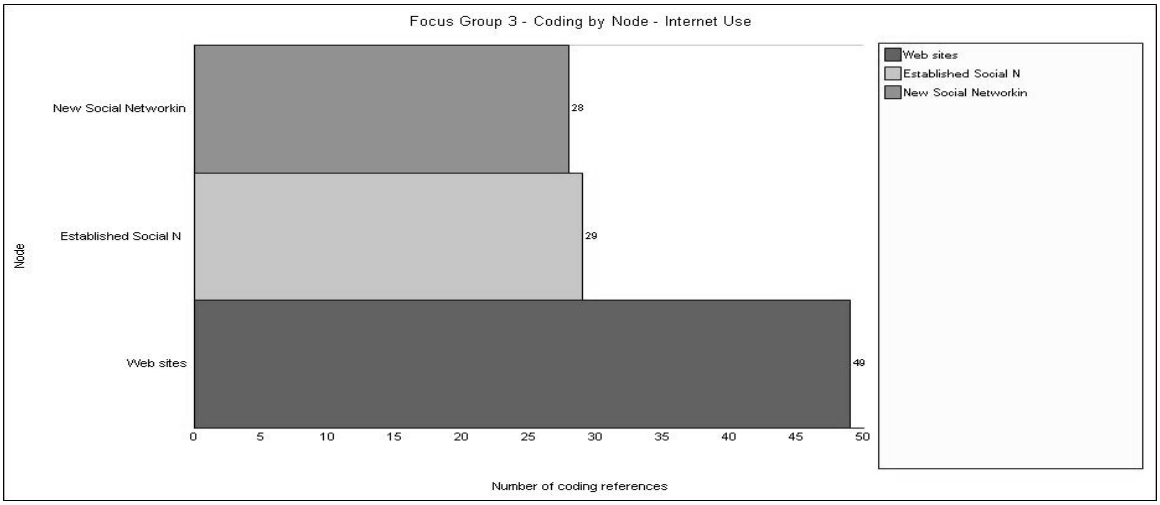


Figure 14. Focus group #3 coding by node - Internet use.

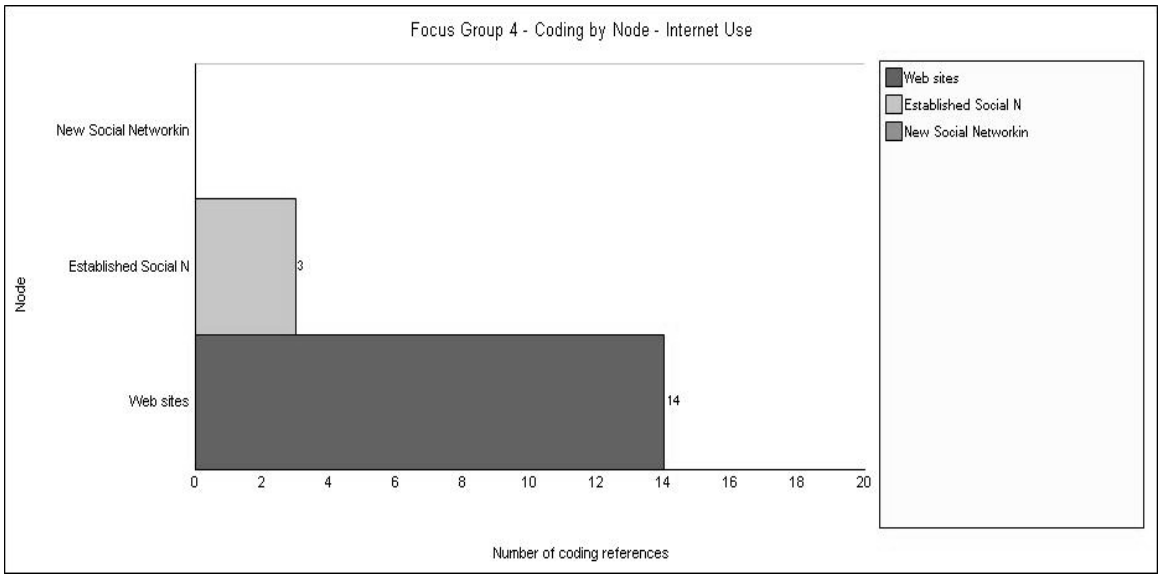


Figure 15. Focus group #4 coding by node - Internet use.

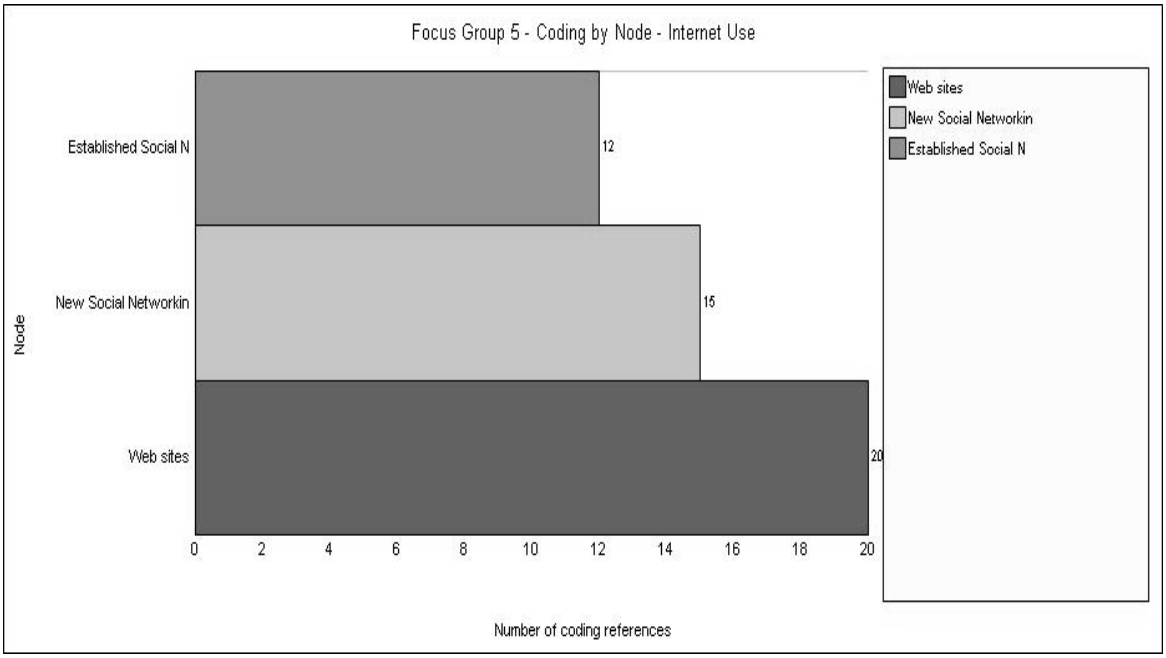


Figure 16. Focus group #5 coding by node - Internet use.

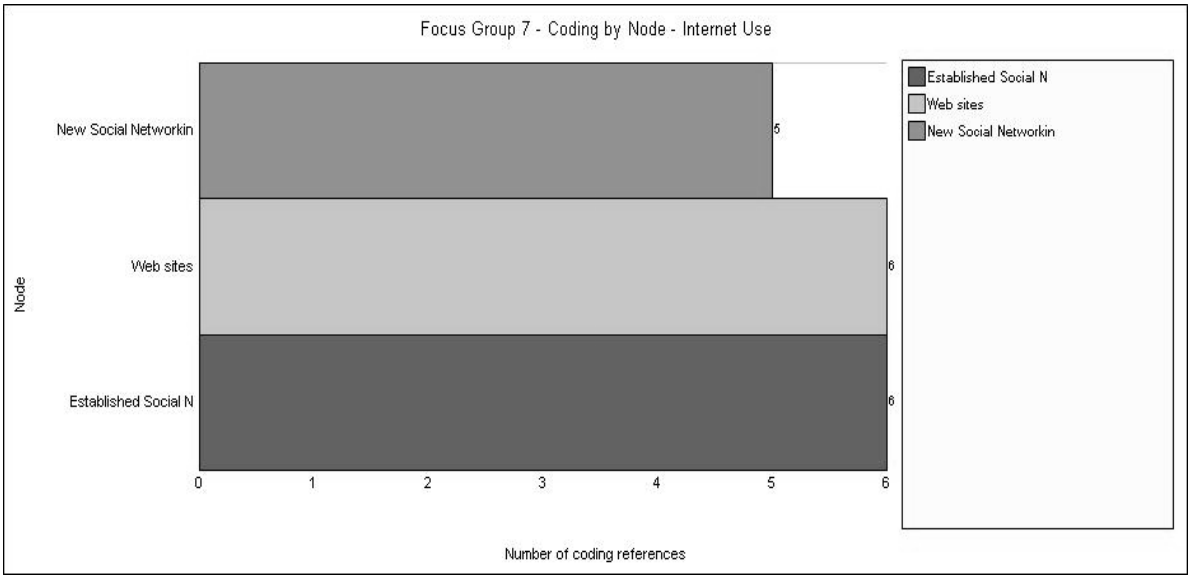


Figure 17. Focus group #7 coding by node - Internet use.

Figure 18 is an alternative view of the overall coding complete on the focus groups' use of the Internet confirms the primary role of static Web site reviewing by students when they discuss their use of the Internet as a sources for their college search and selection process and then the similar volume of discussion recorded by students regarding their use of new and established social networks through the Internet for the same activity.

Node Summary Report

Project: Cybernetworks and the College Selection Process

Generated: 1/21/2009 2:13 PM

Tree Nodes\Sources\Internet Sources\Established Social Networking — **Tree Node**

Description Group to which they belonged prior to the college selection process that were formed outside of this task.

Created On 11/5/2008 3:27 PM **By** BCN

Modified On 12/11/2008 10:59 PM **By** BCN

Users 1

Cases 0

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	5	63	3,029	164			
Total	**5**	**63**	**3029**	**164**			**0**

Tree Nodes\Sources\Internet Sources\New Social Networking groups — **Tree Node**

Description The use of IM, Chat, etc with a new group that they joined specifically for the college search process

Created On 11/5/2008 3:26 PM **By** BCN

Modified On 12/11/2008 10:59 PM **By** BCN

Users 1

Cases 0

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	4	63	4,169	197			
Total	**4**	**63**	**4169**	**197**			**0**

Tree Nodes\Sources\Internet Sources\Web sites — **Tree Node**

Description Static web sites they reviewed for information

Created On 11/5/2008 3:25 PM **By** BCN

Modified On 12/11/2008 10:59 PM **By** BCN

Users 1

Cases 0

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	5	107	7,805	391			
Total	**5**	**107**	**7805**	**391**			**0**

Figure 18. Node summary report of Internet networks.

In summary, the NVivo software, focus group coding suggests that students are active in the cyber-environment with their networks in order to improve their knowledge base or capital. More specifically, their activity is centered on static Web sites such as www.thecollegeboard.com and www.cuny.edu. Also, within the cyber-environment, they appear to be accessing sources not known to them as well as those that are for information they are seeking. This is the opposite of the focus group students' behavior in the traditional in-person environment. Static text sources in the cyber-environment appear to be accessed as sources of information more frequently than the more traditional paper sources or other in-person sources. Therefore, the primary position of static information as a consulted source of information in the college search and selection process is inversely related to the environment in which the student is seeking the information. This part of the analysis then addresses several issues related to social capital. First, in relation to the college search and selection process the consideration of the networking in the cyber-environment is a critical and pronounced part of the process. Not considering it would alter how we understand students' use of networks in this process and their importance. It is only through their combination that we are able to see the true picture of the networking ties. Incorporating the use of cybernetworks as suggested by Lin leads to challenging the fundamental building blocks of the social relationships which constitute social capital such as norms and influence and degrees of closure. In relation to the college search and selection process, as it turns out, students rely on static college Web sites to a great degree to obtain information relevant to their search for and selection of a college than might be expected. However, these Web sites are freely accessible to them regardless of their social status or position or how closely tied they are to this information. Additionally, students indicate that they are engaging with other people through the Internet more than through in-person connections. A

possible reason for this may be that this environment does not entail the same constraints imposed by lack of closure or norms which influence the relationship between individuals interacting face to face and is, at the same time, easier and quicker. More importantly, there is a difference between immigrants and natives which might give us some insight into answering the question regarding norms and their influence in these relationships. The on-line survey analyses will exploration of the difference between immigrant and native in terms of these considerations.

Beyond the general coding completed in the NVivo qualitative analytical software, further review of the focus group transcript text gives many other important indicators about this study's subject matter that are important to review and consider for the on-line survey.

As students were asked about their trust in the information they received from various sources, several issues emerged which support the concept of norms and closure in a social relationships and its impact on social capital. Age of the source in relation to the student was one factor. Students agreed that the individual sources who were further from college attendance age made their information less reliable. This can be seen in the following exchange:

Student 26: **…**some of the people, they didn't really help me like that. They just told me this school is not that known, it's not that popular. It's like when you go apply to get a real job, they're not going to really take that into consideration, because they think of CUNY as a low standard.

Principle Investigator (P.I): And who were these people? This was your circle of friends?

Student 26: Oh, these are people that are not in CUNY, like people older than me and stuff.

A number of other students corroborated the feelings of Student 26. More specifically, Student 53 identified the older person as their parent. This is what she had to add:

Student 53: …the people that ended up not being like they were unhelpful was my parents because I want to like move on to another college, a SUNY college.

P.I.: Okay.

Student 53: And they were the people like, you know, that told me not to and something — I mean, some other people stopped me for that. Like, they were unhelpful for me.

P.I.: Okay. And why in particular were they not helpful?

Student 53: Because I wanted to move on… like far, far from here.

P.I.: Okay.

Student 53: But, I ended up, I mean, leaving to (going to school), you know, where my cousin is and everything.

Emerging from the analysis is a finding that is opposite to what might be expected between the student and a very close informal network tie; their parents. It also illustrates Lin's finding that relationships may have a negative outcome and in this case leading to the choice of the wrong school.

Student 80 also found her parent to be unhelpful. Not due to the disconnect between them and how up-to-date the information was but rather because of the fact that Student 80 was a first generation student her parents did not, therefore, have information about colleges or how to go about selecting one.

> For me, it was definitely my parents and my family. I mean, they supported the fact that I wanted to go to college, but none of—none—no one in my family ever went to college and being in a different country, it wasn't much that they were able to do for me to figure it out (Student 80).

In relation to the students used in this study and the focus on immigrant students, this is an important issue in addition to the question of the strength of the relationship tie.

Specifics also emerged about student impressions of Internet based social networking. In particular, the discussion focused on Facebook.com as a reliable source of information. To him,

> Student 9: Facebook was helpful. I would say I think MySpace, that wasn't too helpful because it's not really based upon schools.
>
> P.I.: Okay. Explain that to me. When you say it's not based upon schools, because—.
>
> Student 9: —Well, it's based upon friends, but rather than Facebook, you could actually sign in with your school, and you just have like all your peers from your school.
>
> P.I.: I see. So, it's sort of an inside perspective attached to the school name—.
>
> Student 9: Yes.

In this instance, we can see that the student finds that the Facebook.com content is helpful because its source is a current student experiencing the college compared to the comments of Student 9 expressing that the age of the source/person impacts the students' trust in their information. Students believed these older sources to be less up to date and therefore less accurate because of their age and therefore lack of recent direct experiences with an institution. Another exchange with Student 73 revealed a similar viewpoint:

Student 73: I actually find information a lot of the time unreliable. But, since I know the people kind of their age and perspective they're writing from, I'm able to gauge kind of what they mean like from the way they write or the level at which they write, like if the professor was actually good or not.

Therefore, this finding supports Wellman's (2007) work that shows that communities take on new definitions in the cyber- environment as they are not necessarily associated with densely knit and bounded neighborhood groups with strong closure and yet places like Facebook.com still provides support, information and a sense of belonging. In addition, it supports Lin's use of Granovetter's weak tie concept that information can flow through such a weak relationship, can be accessed and even proven to be useful to the person.

Continuing with Internet sources, students also expressed that their perception of the Web site's content author and their demographic as well as geographical proximity to the college was a major factor in their ability to trust the source and its information. Student 31 raised this in her statement:

Student 31: I barely touched College Confidential, simply because I didn't know much about the demographic of the student that was writing.

This was followed by Student 38's comment:

Student 38: And the only Web site really used was the main college Web site to get some information about the majors. So, I really didn't use much of anything else.

P.I.: And why in particular did you consult the college Web site as the only Internet source that you used? What was it that made you choose the college Web site versus any other Web site?

Student 38: Because I thought they'd have more accurate information about it because, you know, that's their main site.

In other words, the Web site content owners' affiliation and proximity to the subject matter causes students to place more value on the information provided. Students in the focus group generally agreed with this philosophy. This exchange helps us to understand Coleman's concept of how societal norms in a relationship can inhibit or facilitate certain action. Here the students use societal norms regarding for profit college search companies compared to college owned sources or Web sites and how a student's application of those norms translates into which sources they should trust and which ones not to trust. Therefore, social capital present in the cyber- environment is evaluated in the same way as social capital in face-to-face relationships.

Students also expressed that they used Internet sources mainly because of its constant availability to the students and that all sources including their in-person sources were not viewed as the best source. Rather, it was the combination of information provided from all sources which they accumulated; sorted and evaluated that comprised their social capital to get them through this process. Therefore, in relation to the research questions, we are able to see initially that the Internet is not necessarily replacing other forms of traditional networks but supplementing that information. This comports with Wellman's (2001) research with cybernetworks where face-to-face contact and phone did not diminish with the increasing use of cybernetworks but rather was additive. Additionally, it supports Lin's assertion that we have not fully considered the networks of today without including those occurring through cyber-communication methods or through the Internet.

In summary, the focus groups discussions reveal that students considered many Internet sources. Which sources they ultimately considered and the trust that students put in the

information obtained is affected by the source/owner/creator of the information, the ease of use for the site or technically friendly sites, availability of the source's information and the response speed of the Internet sources. Collectively, the comments regarding the Internet point to it being widely used by students and that they are capable of using societal norms to decide with which ones to engage. It is important to note however, that students use and trust of the Internet sources leans more toward static Web sites and less toward social networking mechanisms such as Facebook.com found on the Internet. Students appear to base their decision to engage or not engage with particular sources on particular characteristics of the Web site. For example, Student 73 states: "I actually would search on Facebook.com for the college I would want to go to, and then a special interest group like my religion or an a capella group or something like that."

This comment captures the collective spirit of the students who participated in the focus group regarding, their *willingness* to engage with *new networks* via the social networking technology. But their *overall willingness* to use social networking technology was best expressed by Student 80:

> For me, like I trusted the people that I asked on-line. Then again, I wasn't gonna start calling (upon) everyone in America. So—but, I really did—when I was—I used Face Book a lot because that's what everybody uses these days. And I had no problem talking to my friends and getting information about the school. I, you know, I trust my friends and that's it.

In these two examples we see where students are using Facebook.com as a static site to gather information regarding student activities and whether this is a match between their interests and the college they are considering. However, Student 80 expresses a deeper type of

information where they need to engage with a closer group of individuals that he trusts without question; his friends. These examples provide an indication that social networking is occurring on-line in ways that are similar to both new and established in-person networks.

The stage of the college search and selection process for the student was another issue that surfaced in the focus groups. Students indicated that they were more likely to engage with and use various Internet sources while they were investigating to which college they would apply. However, when they arrived at the stage when they were making a decision or selecting a college to attend they expressed a greater desire to use their more traditional in-person networks.

The analysis of the focus group transcripts also provided additional sources and Web sites to the lists previously established from the historical research. The additional people who were identified were professionals in the field, religious leaders and independent counselors (educational consultants). New Internet sources were also added. They are www.answers.com, www.google.com, www.yahooanswers.com, www.fastweb.com.

A new factor detected from the focus group analysis was students' use and understanding of text messaging. Students introduced text messaging as a communication method and stated that for them it was analogous to chat and instant messaging. This created a new factor not found in the literature review that is important to the communication tools that students use to communicate with one another.

The overall analysis of these focus groups begins to answer some of the primary research questions set out at the beginning of this research. It is now possible to say that cybernetworks are part of the network used by college bound students in their search and selection process. It appears as though they are used for both more formal networks such as guidance counselors by email exchanges and thecollegeboard.com for general college information taken from that static

site as well as students connecting with their more informal networks such as friends through social networking sites like Facebook.com.

The focus groups conversations reveal that cybernetworks are used differently by students. These differences appear in the networks which they choose to connect with through the Internet or rather as a cybernetwork. Students do not seem to use one or the other based on the issue of a formal or informal network. Therefore, it is not possible to state that formal or informal nature of a network dictates whether students communicate with a particular network in-person or in the cyber-environment. However, the conversations do indicate with whom students choose to engage at various stages of their search and selection of a college. More in-person connections appear to be preferred at the point when students are making their final selection versus when they are searching for a college and therefore gathering general information from various sources. Regardless of when and to what degree the cybernetworks are engaged by students, they have secured an essential position in the process and have been used across various formal and informal networks. The degrees of engagement with these formal and informal networks will be pursued further with the on-line survey findings.

4.4 ON-LINE SURVEY ANALYSIS

The on-line survey analysis has several sections. The first section reviews the response rate and corresponding characteristics in relation to the general U.S. population represented by the U.S Census data, the CUNY undergraduate population and immigrants compared to native respondents. The review of these characteristics and their relationships provide a clear description of the responding population in relation to known issues which the literature reviewed has shown to influence college choice. A summary of those relationships and findings

is given at the end of this first section. The remaining three sections (4.4.2, 4.4.3 and 4.4.4) of the on-line survey analysis are divided by the research questions.

4.4.1 Respondent rate and characteristics

This first section provides the survey response rate as well as important characteristics for the respondents to the online survey and context to the analysis. Although statistical measures of significance and correlation are used in the analyses, some comparisons between the respondents and available CUNY statistics as well as U.S. Census data are provided. This shows more generally how the respondents compare to either the U.S. population or the overall CUNY undergraduate population prior to statistical analysis. In addition, should any of the chi-square analyses prove not to be statistically significant but have a high correlation, this review provides the context for speculation about relationships that appear to be emerging from the data but would require additional data collection and analysis.

Approximately 6% (n = 515) of those invited responded to the request and 3% (n = 302) completed the entire survey. Table 2 below represents the gender, place of origin, ethnicity, and U.S. Census SES ranges for these survey respondents.

Of the 302 respondents 31% (n = 93) were male and 69% (n = 209) where female. First year gender statistics for the participating CUNY Colleges were not available but the gender breakdown for *all undergraduate enrollments* was 40% male and 60% female ("Undergraduate Enrollment by Race/Ethnicity, Gender and College," 2007). Although the percentages representing the survey respondents' gender did not match exactly the CUNY undergraduate population, they do show a similar pattern where females are proportionately more numerous than males. It is also reasonable to expect that this study would experience greater female

participation due to the overall higher percentage of females undergraduates enrolled in the participating CUNY colleges.

Table 2 *On-line survey demographic responses and 2007 CUNY undergraduate data*

		Number of survey respondents	Percent of survey respondents	Percent of total CUNY undergraduate population
Gender				
	Male	93	30.8	40
	Female	209	69.2	60
Place of Origin				
	Immigrant	115	38.1	
	Native	187	61.9	
Ethnicity				
	Native Americans		<1	<1
	Asians and Pacific Islanders		20	15
	Hispanic/Latinos		23	20
	Black/African Americans		17	25
	White/Caucasians		36	39
	Other		3.6	N/A
SES Affiliation				
	Upper class / $350,000 and above	3	1	
	Upper/middle class / $100,000 – $349,999	28	9.3	
	Middle class / $65,000 – $99,999	64	21.2	
	Lower/middle class / $35,000 – $64,999	60	19.9	
	Lower class / $0 – $34,999	112	37.1	
	Not sure	35	11.6	

A racially and ethnically representative sample of the student population was also desired. In keeping with current ethnic categories of the U.S. Census students were first asked if they were Spanish, Hispanic or Latino. Table 2 shows over 23% of the responding students

indicated that they belonged to one of these categories and 76.5% stated they did not: 2.6% indicated Mexican American/Chicano affiliation, 5.3% Puerto Rican, .7 Cuban and 14.9% Other Spanish/Hispanic/Latino designations. Only one person in the 23% chose not to select a particular affiliation. Almost 36% of the other 76.5% respondents identified themselves as White/Caucasian, 17.2% as African American/African/Black, 19.5% as Asian American/Asian/including Indian Subcontinent, .3% as Native American/Alaskan Native, .3% as Pacific Islander/Native Hawaiian and 3.6% as other. Again, the ethnicity for CUNY first-year students from the five participating colleges was not available and the total undergraduate population statistics were used instead. According to the CUNY Office of Institutional Research and Assessment (OIRA) 2007 statistics of the representative colleges have a total of 72,922 undergraduate students that represent <1% Native Americans, 15% Asians and Pacific Islanders, 20% Hispanic/Latinos, 25% Black/African Americans, and 39% White/Caucasians ("Undergraduate Enrollment by Race/Ethnicity, Gender and College," 2007). Although these ethnic percentages do not correspond exactly to those of the CUNY undergraduate population, they do follow a very similar percentage pattern, with Whites/Caucasian representing the highest percentage, followed by Black/African/African American, then Spanish/Hispanic/Latino, then Asian, then “Other”, then Native American. The total undergraduate population at CUNY reflects the same order; however, Black/African/African American and Spanish/Hispanic/Latino switch places in the order. Since each participating CUNY college has a different percentage order when considered by themselves, it is reasonable that the ethnic breakdown for our respondents might be slightly different for each ethnic group’s participation. However, these percentages represent a very close approximation for a typical CUNY first year student ethnic breakdown. Ethnicity by place of origin was also analyzed. The immigrant population contained

20 percent Asian American, Asian, including Indian Subcontinent respondents compared to four percent for the native respondents. The native respondents resulted in 22 percent White/Caucasian compared to 11 percent of the immigrant students. All other ethnicities were exactly similar or within a few percentage points different from the other in relation to the students place of origin. Therefore, it would appear that factors most associated with the immigrant Asian population found in the literature review might be pronounced in the immigrant student analysis. Similarly, the higher percentage White/Caucasian native respondents might be pronounced in the native student responses. However, since the Spanish/Hispanic/Latino ethnic classification represented the highest percentage respondents for both immigrants (55 percent) and native (58 percent) students, the findings should be most reflective of this population. The immigrant respondents also reflect current immigrant trends in the United States as the Spanish/Hispanic/Latino and Asian populations represent the first and second highest percentage responses of this group respectively.

The student respondents from the selected CUNY colleges resulted in 115 or 38.1% were from an immigrant background compared to 187 or 61.9% were native to the United States. In addition, students were asked to provide the age when they immigrated to the United States.

Figure 19 shows this age distribution. The first bar represents the frequency for the sum of the students who responded to this question in comparison to the numbers that responded to a certain age of immigration. Clearly the mode of the age when students immigrated was in the teenage years which would indicated that for a percentage of the immigrant students, some of their high school training would have been in their country of origin.

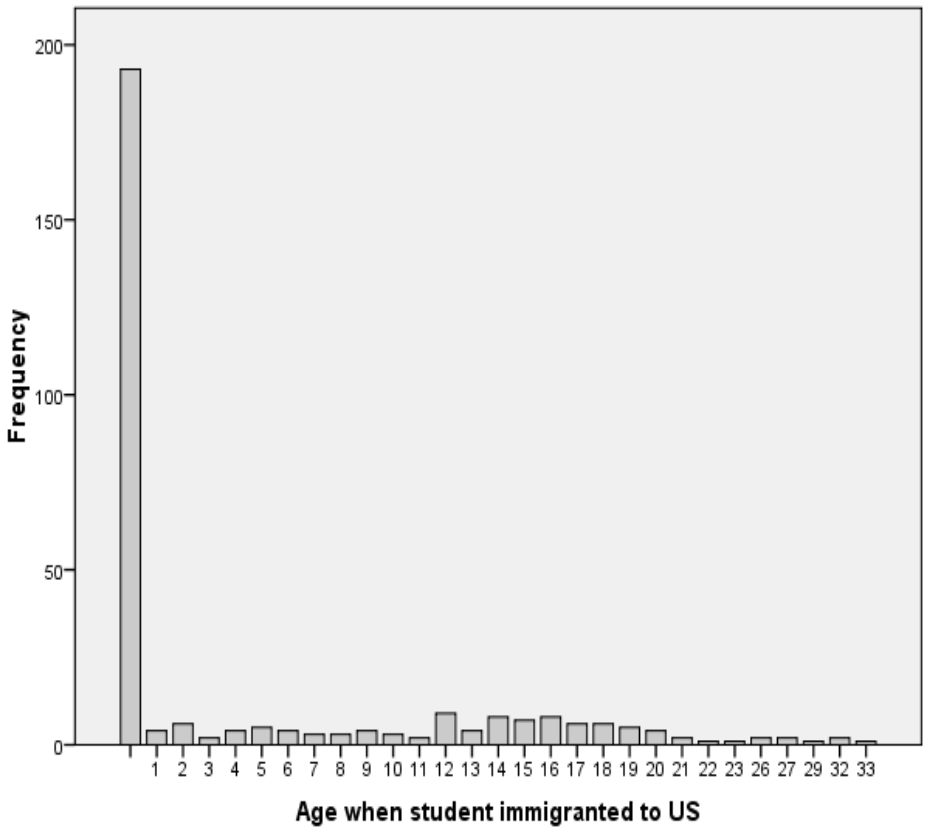


Figure 19. Age when student immigrated to United States.

Respondents indicated if they were first generation college bound students that situate them into the corresponding U.S. Census data covered in the literature review. In addition, the literature reviewed indicated that students who have parents who attended college would have more information or capital about the college search and selection process and would somehow be advantaged in this process A cross tabulation was run on immigrant status and first generation of college attendance to assist with the interpretation of this study's findings. This analysis shows that responses are statistically significant with the Pearson Chi-Square (2-sided) of .000 or $p < .001$ (see Table 3). As such, we see that the immigrant students in the CUNY population tend to have more first generation than second generation college bound students than the native population. This does correspond with the U.S. census data reviewed earlier. In addition, the

results correspond with the U.S. Census findings that a large percentage of immigrants now represent second-generation college bound students in addition to more immigrants coming from SES groups other than lower income. In the respondent population of immigrants, 57.4% are second-generation college bound students compared to 42.6% first-generation college bound students among immigrant respondents. Because of the significant relationship between the generation attending college and place of origin (see Table 3) suggests a moderate probability that differences and similarities in place of origin should also reflect that of the generation attending college.

Table 3 *Immigrant status compared to first generation of college attendance*

			Is the student the first generation to attend college		
			Yes	No	Total
Immigrant Status	Yes	Count	49	66	115
		% within Immigrant Status	42.6%	57.4%	100.0%
		% of Total	16.2%	21.9%	38.1%
	No	Count	41	146	187
		% within Immigrant Status	21.9%	78.1%	100.0%
		% of Total	13.6%	48.3%	61.9%
	Total	Count	90	212	302
		% within Immigrant Status	29.8%	70.2%	100.0%
		% of Total	29.8%	70.2%	100.0%

Pearson Correlation = .220 significant at the 0.01 level (2-tailed)
Pearson Chi-Square (2-sided) of .000 or $p < .001$

Literature reviewed determined that SES was as an important ascribed characteristic that plays a role in educational attainment/outcomes. It is therefore one of the two ascribed characteristics that this study reviews in relation to the college attendance as an educational outcome along with student place of origin. Table 4 below shows that the largest percentage of all survey respondents represented the lower class. The second largest population was from the

middle class and the third largest was from the lower/middle class. Slightly over 10% of the respondents were from the upper/middle class and upper class.

Table 4 *Socio-economic status (SES) for on-line survey respondents*

	Frequency	Percent	Valid%	Cumulative%
Upper class / $350,000 and above	3	1.0	1.0	1.0
Upper/middle class / $100,000 – $349,999	28	9.3	9.3	10.3
Middle class / $65,000 – $99,999	64	21.2	21.2	31.5
Lower/middle class / $35,000 – $64,999	60	19.9	19.9	51.3
Lower class / $0 – $34,999	112	37.1	37.1	88.4
Not sure	35	11.6	11.6	100.0
Total	302	100.0	100.0	

Table 5 shows the relationship between place of origin and SES for the survey respondents. Any interpretation of the native and immigrant students will need to take into consideration these differences and similarities. For example, the students whose families make $100,000 or more a year in income contain more native students than immigrant students (28 versus 3). Due to the low response in these upper income SES ranges,[20] my analyses will be limited to the lower- and middle class segments. Also, the immigrant population is heavily skewed to the lower income range as a group and therefore we might suspect that financial considerations could play a larger role in some of their responses than among native students. Still, it may not result in significant differences between place of origin groups and the type of college (two-year vs. four-year) because the cost of these two types of CUNY schools is the same.

[20] Minimally 10 respondents are typically needed for sufficient statistical analysis. It is also important to note that the historical mission of CUNY has been to serve the middle to lower class populations with a high quality education therefore; the low response rate from the upper SES ranges is not unexpected.

Table 5 *Cross-tabulation between immigrant status and SES*

			Current SES						
			Upper class / $350,000 and above	Upper/middle class / $100,000 – $349,999	Middle class / $65,000 – $99,999	Lower/middle class / $35,000 – $64,999	Lower class / $0 – $34,999	Not sure	Total
Immigrant Status	Yes	Count	2	2	17	21	61	12	115
		% within Immigrant Status	1.7%	1.7%	14.8%	18.3%	53.0%	10.4%	100.0%
		% within Current SES	66.7%	7.1%	26.6%	35.0%	54.5%	34.3%	38.1%
		% of Total	.7%	.7%	5.6%	7.0%	20.2%	4.0%	38.1%
	No	Count	1	26	47	39	51	23	187
		% within Immigrant Status	.5%	13.9%	25.1%	20.9%	27.3%	12.3%	100.0%
		% within Current SES	33.3%	92.9%	73.4%	65.0%	45.5%	65.7%	61.9%
		% of Total	.3%	8.6%	15.6%	12.9%	16.9%	7.6%	61.9%
	Total	Count	3	28	64	60	112	35	302
		% within Immigrant Status	1.0%	9.3%	21.2%	19.9%	37.1%	11.6%	100.0%
		% within Current SES	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	1.0%	9.3%	21.2%	19.9%	37.1%	11.6%	100.0%

Since the study proposes to understand SES in relation to certain research questions, it is important to review the main family dyad of mother and father as well as differences in the financial support they provide to immigrant and native students. This will also help in our interpretation of the data. Table 6 is a cross-tabulation between students reporting that their

mother was living at home and their father was living at home while controlling for place of origin. As can be seen in the respective percentage comparisons between the native and immigrant students, similar patterns appears between those who have both, those who have neither and those who have either one or the other but not both.[21] In addition, cross-tabulations were conducted between mother and father living with the student as well as contributing financially to the student's college costs and are shown in Table 6. The findings indicate that there is no statistical difference in family structure or financial support from the family structure between immigrants and natives.

[21] Similarities were also found between students who indicated a birth parent and step-parent present as well which also accounts for a large portion of the remaining 302 students not represented in the table referenced here.

Table 6 *Comparison of student place of origin with mother and father living in household*

Immigrant Status				Father Living at Home with Student		
				Does Not Live in Household	Lives in Household	Total
Yes	Mother Living at Home with Student	Does Not Live in Household	Count	26	7	33
			% within Mother Living at Home with Student	78.8%	21.2%	100.0%
		Lives in household	Count	24	58	82
			% within Mother Living at Home with Student	29.3%	70.7%	100.0%
		Total	Count	50	65	115
			% within Mother Living at Home with Student	43.5%	56.5%	100.0%
No	Mother Living at Home with Student	Does Not Live in Household	Count	26	3	29
			% within Mother Living at Home with Student	89.7%	10.3%	100.0%
		Lives in household	Count	53	105	158
			% within Mother Living at Home with Student	33.5%	66.5%	100.0%
		Total	Count	79	108	187
			% within Mother Living at Home with Student	42.2%	57.8%	100.0%

High school average was another factor has historically been shown to have implication for the process this study aims to investigate. Indeed, admissions standards would not allow students with a low high school average to choose a four-year CUNY College regardless of the amount of information they gather. Table 7 shows the breakdown of the self reported high school average by the students as well as the separation of those averages by place of origin. There is significant corresponding percentage representation by high school average among immigrants

and native survey respondents. Therefore, when making comparisons between native and immigrant students and their college choice specifically for a four year college, variation in high school performance between native and immigrant students should not be a significant latent factor influencing their choice.

Table 7 *Cross-tabulation of immigrant status and high school average*

			High School Average				
			A	B	C	D or below	Total
Immigrant Status	Yes	Count	36	65	13	1	115
		% within High School Average	37.5%	41.4%	28.9%	25.0%	38.1%
		% of Total	11.9%	21.5%	4.3%	.3%	38.1%
	No	Count	60	92	32	3	187
		% within High School Average	62.5%	58.6%	71.1%	75.0%	61.9%
		% of Total	19.9%	30.5%	10.6%	1.0%	61.9%
	Total	Count	96	157	45	4	302
		% within High School Average	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	31.8%	52.0%	14.9%	1.3%	100.0%

Pearson Chi-Square for immigrant and native students = .000 or $p < .000$ (2-sided)
Pearson R for native students = .411 and immigrant students = .452

Entrance examinations also play a role in this process and could be a factor in our interpretation of the results; therefore another cross-tabulation was completed to factor in the entrance examinations. Both Tables 8 and 9 shows that there is similar representation across high school averages for immigrants and native respondents who had the minimum SAT or ACT minimum. Because of this similarity in high school average patterns, it is not anticipated that it would play a role in comparative analysis of findings where place of origin is a factor as well.

Table 8 *Cross-tabulation for student place of origin/SAT eligible compared to high school average*

Immigrant Status				High School Average				
				A	B	C	D or below	Total
Yes	SAT Eligible	Possibly Eligible by SAT	Count	26	37	9	1	73
			% within High School Average	100.0%	100.0%	100.0%	100.0%	100.0%
			% of Total	35.6%	50.7%	12.3%	1.4%	100.0%
		Total	Count	26	37	9	1	73
			% within High School Average	100.0%	100.0%	100.0%	100.0%	100.0%
			% of Total	35.6%	50.7%	12.3%	1.4%	100.0%
No	SAT Eligible	Possibly Eligible by SAT	Count	47	70	20	1	138
			% within High School Average	100.0%	100.0%	100.0%	100.0%	100.0%
			% of Total	34.1%	50.7%	14.5%	.7%	100.0%
		Total	Count	47	70	20	1	138
			% within High School Average	100.0%	100.0%	100.0%	100.0%	100.0%
			% of Total	34.1%	50.7%	14.5%	.7%	100.0%

Table 9 *Cross-tabulation for place of origin/ACT eligible compared to high school average*

Immigrant				High School Average			
				A	B	C	Total
Yes	ACT Eligible data	Possibly ACT Eligible	Count	6	15	1	22
			% within High School Average	100.0%	100.0%	100.0%	100.0%
			% of Total	27.3%	68.2%	4.5%	100.0%
		Total	Count	6	15	1	22
			% within High School Average	100.0%	100.0%	100.0%	100.0%
			% of Total	27.3%	68.2%	4.5%	100.0%
No	ACT Eligible data	Possibly ACT Eligible	Count	12	9	3	24
			% within High School Average	100.0%	100.0%	100.0%	100.0%
			% of Total	50.0%	37.5%	12.5%	100.0%
		Total	Count	12	9	3	24
			% within High School Average	100.0%	100.0%	100.0%	100.0%
			% of Total	50.0%	37.5%	12.5%	100.0%

Table 10 shows the age distribution of the respondents. Ninety-three percent of the respondents fell within the traditional college age group (< 25) and the remaining 7% of the students fell above that age group.[22]

Table 10 *Student age distribution for on-line survey*

Age	Frequency	Percent
18	183	60.6
19	49	16.2
20	22	7.3
21	10	3.3
22	5	1.7
23	7	2.3
24	2	.7
25	2	.7
26	4	1.3
27	2	.7
28	1	.3
29	2	.7
30	1	.3
31	2	.7
32	1	.3
33	3	1.0
35	2	.7
38	1	.3
45	1	.3
49	1	.3
Total	301	99.7
Missing	1	.3
Total	302	100.0

Since the literature reviewed discussed the importance of the digital divide with possible implications for students' ability to use cybernetworks regardless of their desire to use them,

[22] The responses of the non-traditional students were compared to those of the traditional student population. It was determined that their responses were not statistically different and therefore should not be removed from the overall survey responses which would further reduce the total number of responses used in the study's analysis.

respondents were asked whether they had access to a computer during their college search, whether they used it for their search, the frequency of access at the various locations and the connection speed of the computer most frequently used. For example, if a student did not have access or access that was readily available (in home versus having to go a distance to get to a computer) or the speed of the access such as a slow connection versus a high speed connection, then the interpretation of the analysis would have to consider this.

Table 11 below shows that 3% or 9 responding students did not have access to a computer. These computer access results show a higher percentage of computer access than the NTIA report discussed in the literature review which showed 60.74% of urban New York state respondents indicated they had a computer at home and 66.81% reported Internet access in 2007 (*Falling Through the Net: Toward Digital Inclusion: A Report on Americans' Access*, 2007). This statistic has two implications. First, computer access does not represent a variable to be considered in the analysis. Since almost all respondents had access to a computer and used it for their college search, the digital divide is not a useful consideration for the analysis of this study. Second, this finding is significant and unexpected because of the diverse SES and places of origin that suggest a digital divide should exist. Therefore, unlike the Eduventures, Inc research that indicated low access and therefore low use by lower socioeconomic students, the preliminary numbers in my survey do not support this conclusion (*College Search and the Millennial Generation*, 2007). However, because the invitation to participate in this study was sent through email and the survey was also conducted on-line, the respondents are likely to represent a student population that is comfortable with, uses and has access to a computer and the Internet. Still, because of the population that is used for the study mostly represents the bottom half of the SES ranges and a high immigrant population, this finding is important.

Table 11 *Students' access and use of computers during college search*

	Frequency	Percent	Valid %	Cumulative %
No Access	9	3.0	3.0	3.0
Yes	238	78.8	78.8	81.8
Yes, But Did Not Use	55	18.2	18.2	100.0
Total	302	100.0	100.0	

If the respondent indicated that they did not use any on-line sources during the college selection they were prompted to answer why. They were given a series of reasons that comport with those found in the college search and selection literature review and focus groups as well as given the opportunity to list their own reasons. Table 12 shows the responses to that question. Overall, most students chose one of the reasons provided in the survey indicating that the respondents were similar to the populations in the historical research and focus groups. The most frequently chosen response indicates that respondents were mostly not informed of college search information being available on line. The second most frequently chosen response indicates that they did not even begin to think about the Internet as a source for information or networking for their college search and selection. Finally, an even smaller number than reported earlier indicated that they simply did not have access to a computer (n = 4) further confirming that lack of access was not a factor for those who actively did not use, Internet sources.

Table 12 *Responses to question 24 asking students why they did not use any on-line sources during their college search*

	n
I did not know these on-line college search resources existed.	20
My computer was not capable of using the technology behind many of these sites.	0
My schedule did not allow me time to sit at the computer to use these sources.	3
I did not trust the information I would get from these on-line sources.	4
I did not even begin to think about going to the web for college search information sources.	10
I did not have access to a computer.	4
If other, please specify.	0

Further, it was suspected that age or place of origin might be an issue for not using online sources for their college search process. A cross-tabulation was run on the responses listed in Table 13 with respondent's age while controlling for place of origin. Tables 13 and 14 are the results for the two reasons in the list most selected by the respondents. Although the numbers are small it is interesting that in Table 13 the immigrants who indicated that they did not even begin to think about going to the web for college search information were non-traditional in age. This would appear to make sense, as older students might not be as well informed about the kinds of college search tools and information available on the web. Additionally, earlier research might lead us to believe that another factor explaining that they were less informed about these potential resources was the fact that they are immigrants. However, the highest percentage of affirmative respondents to this statement was traditional aged non-immigrants. Table 14 depicts the numbers of students who probably use the Internet overall in their daily life but did not think to use it for their college search and selection. Here too it is interesting that those who chose this response were equally split between immigrants and non-immigrants, therefore indicating that the most frequently given reasons for not using the Internet in college search and selection

cannot be associated with a particular student place of origin. Additionally, the issue of being older and therefore less web savvy appears not to be the issue as well for both immigrants and natives since a majority of the respondents in both categories are traditional aged. Certainly, these numbers are very small and statistically insignificant (3.5% and 7% respectively) but it is nevertheless interesting that the data contradict common suppositions.

Table 13 *Cross-tabulation for student age and reason for not using the Internet*

				Student Age					
Immigrant Status				18	19	22	23	33	Total
Yes	I did not even begin to think about going to the web for college search information sources.	Agree	Count				1	2	3
			% within I did not even begin to think about going to the web for college search information sources.				33.3%	66.7%	100.0%
		Total	Count				1	2	3
			% within I did not even begin to think about going to the web for college search information sources.				33.3%	66.7%	100.0%
No	I did not even begin to think about going to the web for college search information sources.	Agree	Count	3	3	1			7
			% within I did not even begin to think about going to the web for college search information sources.	42.9%	42.9%	14.3%			100.0%
		Total	Count	3	3	1			7
			% within I did not even begin to think about going to the web for college search information sources.	42.9%	42.9%	14.3%			100.0%

Table 14 *Cross-tabulation for students' age and reason for not using the Internet*

Immigrant Status				Student Age						
				18	19	20	22	33	49	Total
Yes	I did not know these on-line college search resources existed.	Agree	Count	1	6	1		2		10
			% within I did not know these on-line college search resources existed.	10.0%	60.0%	10.0%		20.0%		100.0%
		Total	Count	1	6	1		2		10
			% within I did not know these on-line college search resources existed.	10.0%	60.0%	10.0%		20.0%		100.0%
No	I did not know these on-line college search resources existed.	Agree	Count	4	3	1	1		1	10
			% within I did not know these on-line college search resources existed.	40.0%	30.0%	10.0%	10.0%		10.0%	100.0%
		Total	Count	4	3	1	1		1	10
			% within I did not know these on-line college search resources existed.	40.0%	30.0%	10.0%	10.0%		10.0%	100.0%

Table 15 reflects where the survey respondents accessed a computer for their college search. A majority (95%) of students indicated using a computer often to consistently at home. The second most used computer location respondents chose to indicate where they research their college information on-line. In addition, students were asked to identify other locations which were not listed to ensure that the survey was capturing all access locations. Two other locations were identified outside of the list provided to students. These two locations were "work" and "friend's house." Work was mentioned by two separate respondents and friend's house was

noted by 10 respondents. However, the overall additional locations were not large enough or consistent enough to be considered significant for access or use by the responding students.[23]

Table 15 *Student use of computer at home*

	Percent of Total Respondents					
	Consistently	Usually	Often	Sometimes	Seldom	Did Not Use
Home	60.3	10.3	4	3	0.3	1
School	14.9	13.9	12.3	17.5	2.6	17.5
Guidance Office	5.3	5.3	7	9.6	7.6	44
Public Library	3.6	2	2.3	4.3	8.3	58.3
Internet Café	2	2	2	4	5	63.9

Finally, students provided the type of Internet connection for the computer they used most often for their college search. Table 16 also shows that of the students who used the Internet only 2.6% used a connection that would be considered slow and as a result might have some impact on their degree of use. Clearly the majority of students here are also using a computer that provides a very rapid response and should therefore not be an underlying factor from students that indicated that they used the computer but not consistently because of the speed of their connection. Since the users indicate that they have high speed connections, we can assume that those who did not use the Internet regularly did not do so because of the slowness of that communication method.

[23] Additional data can be viewed in the overall results for the on-line survey covered in Appendix H. Questions 35 and 36 cover the additional locations mentioned by respondents.

Table 16 *Type of Internet connection on computer used for college search*

	Frequency	Percent	Valid %	Cumulative %
Did not use Internet	64	21.2	21.2	21.2
Dial Up / Regular Phone Connection	8	2.6	2.6	23.8
High Speed Cable	86	28.5	28.5	52.3
DSL - High Speed Phone Connection	75	24.8	24.8	77.2
Wireless	64	21.2	21.2	98.3
Satellite / Dish Connection	2	.7	.7	99.0
Internet on Cell Phone	3	1.0	1.0	100.0
Total	302	100.0	100.0	

In sum, this section provides several important findings about the respondent population. The respondents according to their gender and ethnicity mirror similar percentage trends as the CUNY undergraduate population. The respondents provide a sufficient immigrant population for the study. The native and immigrant students are similarly represented in first and second generation college attendance patterns. Because of the lack of respondents in the upper class SES ranges, the analysis is limited in relation to this group. Although there were respondents that were non-traditional age college students (> 25 years old), their responses were not found to be statistically different than traditional ones. Native and immigrant students were not found to be different in relation to their family dyad, high school grades, SAT/ACT eligibility or access to computers/Internet. These characteristics will provide context in which the analyzed data can be understood.

4.4.2 Research question #1: Networks and communication methods

As explained earlier statistical analysis using SPSS was completed on the data obtained from the on-line survey instrument. Appendix H is a display of the on-line survey instrument and the cumulative results which includes partial respondents.[24]

The first research question pertains to the role cybernetworks play in relation to formal and information networks of students in the college selection process. The analysis of the formal and informal networks/sources which were identified in the historical research and focus groups and further investigated in the online survey provides insight into these relationships. In the on-line survey students were asked to indicate if they used the various networks/sources and if so, to rate the information they received from them. Formal sources/networks identified in the study consisted of guidance counselor, college admissions counselor, independent college counselor, and current college students,[25] professional in the field, college faculty members, high school teachers, athletic coaches, and religious persons. Informal sources/networks were defined as mother, father, sibling, other relatives, friends, neighbors. It should also be noted that the informal networks represent strong ties and the formal networks are weaker ties as measured by their perceived strength or intimacy of the relationship or their role category such as friends, relatives, etc. (Lin, 2001a, p. 82) Table 17 shows each of these networks, their use and the rating of the information by the respondents that used them.

[24] The results in Appendix H include all respondents to the survey. For analysis purposes, the partial respondents were removed and therefore the figures discussed in the results section reference only completed surveys by the CUNY students. It should be noted that a majority of the students who did not complete only answered roughly ¼ or less of the complete survey and was the main reason for removing them from the results.

[25] Current college student is a formal network because this role category is defined as a student enrolled at the college to which the survey respondent is considering. Typically the respondents would be contacting these students for the first time to inquire about the college and would not have had contact with them prior to starting their college search and selection process.

Table 17 *Use and rating of informal and formal networks*

	Percentage Use and Rating					
	Excellent	Very Good	Average	Below Average	Poor	Did Not Use
Mother	19.9	21.5	21.9	3.6	4.6	28.1
Father	15.9	15.6	17.5	5.6	6.0	39.1
Sibling	19.2	20.2	11.9	2.3	3.3	42.7
Other Relatives	14.6	22.2	22.2	2.0	3.6	35.1
Guidance Counselor	23.8	24.8	16.6	5.3	3.3	25.8
College Admissions Counselor	14.9	19.2	18.9	3.6	4.3	38.7
Independent College Counselor	4.0	6.3	7.0	2.3	2.3	77.8
Professional In Field	6.3	14.6	12.9	1.0	0.7	64.2
Current College Student	20.2	26.8	18.3	1.3	0.3	32.8
College Faculty Member	6.3	16.9	13.6	0.7	1.0	61.3
High School Teacher	22.2	23.2	18.9	3.3	1.3	30.8
Friends	20.9	28.1	23.8	5.0	1.0	20.9
Athletic Coach	3.3	5.6	8.3	1.7	0.7	80.1
Religious Person	5.6	3.6	7.0	1.7	1.0	81.1
Neighbors	5.0	7.0	9.9	3.6	1.3	72.8

Among all networks either the formal or informal does not dominate the top or bottom of the list according to the respondents' overall use. The following shows top nine networks surveyed in order of percentage used. They are as follows: friends 79.1%, guidance counselor 74.1%, mother 71.5%, High School teacher 69.1%, current college student 67.1%, other relatives 64.8%, college admissions counselor 61.1%, father 60.8% and siblings 57.1%

In relation to the concept of strong ties and weak ties, it might be suspected that the informal family members such as mother, father and siblings would be listed higher because of the strength of those ties and the closure exhibited between them. However, looking down the above listing, it is interesting to note that father is ranked very low among the responding students compared with the mother and the siblings compared with the friends. This gives support for Granovetter's concept of weak ties that Lin also adopted. Here we can see that students have selected friends overall as their most used network. This informal network,

although not necessarily “weak” is weaker than that between the student and the mother and father. Therefore, as Granovetter would suggest, our respondents in this process find that the weak ties with their friends and more specifically even weaker ties seen in their guidance counselor, high school teacher and current college students, for their college search and selection process has the ability to promote access to different, new and socially valuable information that possibly is equal to better than their strong ties. As we know from the focus groups, students have indicated that their use of any one source is typically to be used in conjunction with others in order for the student to arrive at information which they find useful and accurate. This order of formal and informal sources can be understood through the interaction postulate associated with social capital theory. According to this postulate, interactions are understood to occur among actors with similar or contiguous characteristics or lifestyles. As this question sought to find which sources students used and also ranked best for the task of searching and selecting a college the order makes sense. In other words, their friends typically are in their same high school grade or older so this group is either going through the same process of, gathering information and applying to school, through search Web sites, etc. or they have recently completed the process and are enrolled at a potential school for our respondents. Similarly, one of the guidance counselors’ roles is to assist students with their college search and selection and is the contact source at any high school between college admissions personnel and the students. Teachers serve a more limited but somewhat similar role as guidance counselors. Therefore, the strong roles, and association with the task asked about to the respondents helps to better understand from a theoretical perspective why they are more primary and accessed more frequently than other sources.

Considering these formal and informal sources further, the on-line survey respondents were asked to rate these networks information usefulness. Adjusting the order of the formal and informal networks based on the ratings given to these networks by their users provides two pieces of information. First, by considering only the percentage of students who indicated the source to provide very good or excellent information for their college search, there appear to be a number of students that use these particular networks but do not find their information helpful. This finding is important as it supports Lin's fourth assertion, unlike Coleman that social capital should not be defined by the resulting outcome of the relationship but by the relationship itself and that it is the information embedded in the relationship which can prove to have either positive or negative outcomes. In these instances, students have engaged with various formal and informal information channels and rated their embedded information gained from the relationship with reference to their task of searching and selection a college. The rating of the embedded information and what it reveals about informal and formal networks for this process is the second important finding. This new order represents the percentage used according to the combined rating of very good and excellent. They are as follows: friends 49.0%, guidance counselor 48.6%, current college student 47.0%, High School teacher 45.4%, mother 41.5%, sibling 39.4%, other relatives 36.8%, college admissions counselor 34.1% and father 31.5%.

Unlike the previous order when the quality of the information received is considered the higher ranked networks are the formal ones as evidenced by guidance counselor, current college student and high school teacher assuming the second, third and forth position while informal networks/sources such as mother, sibling and other relatives and father occupy the bottom of the list at the fifth, sixth, seventh and ninth positions. The only anomaly to this trend is friends that occupied the top spot on both lists. However, using the interaction postulate and strength of

strong tie proposition of social capital theory, friends represent an informal network (strong tie) and have similar characteristics of resources to the on-line survey respondents which explain their primary position on both the use and positive-resource-rating lists. The interaction postulate also helps to explain the movement of mother further down the positive-resource-rating list in comparison to the use list. It is not necessarily the fact that mother is an informal information source but that among those rated more highly on their information, the others are more similar in their characteristics of resources in relation to the college search and selection process than mother. The network postulate and strength-of-weak tie proposition can assist in explaining the order of the list further. This postulate asserts that actors are interacting because of resources that they personally posses but that most of their resources are embedded in others with who each actor is in contact. Considering the information and networks possessed by friends, guidance counselors, current college students and high school teacher about the college search and selection process, the lowering of mother in relation to the usefulness of information and therefore networks is better understood. Mother is a resource that is less well connected as well as structurally further away from those at the top of the list in relation to the college search and selection process and therefore, according to this postulate we would expect her position to fall below those listed at the top. In addition, high school teacher, guidance counselor and current college students as formal networks are considered weak ties in relation to the role category and compared with the informal networks in this list. As such, their high position supports the assertion of the proposition that the weaker the tie, the more likely the respondent in this situation will have access to better social capital to gain new information about the college search and selection process otherwise known as instrumental action.

The high importance of friends is also supported by another question in the on-line survey. Table 18 provides the statistics for the responses to question 28 from the on-line survey. Students were asked to state their agreement with the idea that the age of their source influenced their trust in their information. Almost 35% agreed or strongly agreed with the statement. There appears to be a pattern between the responses to both questions. Seventy-nine percent of the respondents indicated use of friends (see Table 17) in comparison to 88.7% of respondents to question 28 on the trustworthiness of the peers indicating use of peers in general. Correspondingly, 49.2% of the respondents indicated that the information from their friends was very good to excellent compared with 34.8% (32.8% indicate *neutral* and 21.1% *disagree* or *strongly disagree*) of those using their peers and indicating their information to be trustworthy due to their age. Although not precisely the same, it follows a similar pattern of use and trust.

Table 18 *Trustworthiness of information connected to age*

	Frequency	Percent	Valid %	Cumulative %
Strongly Agree	31	10.3	10.3	10.3
Agree	74	24.5	24.5	34.8
Neutral	99	32.8	32.8	67.5
Disagree	45	14.9	14.9	82.5
Strongly Disagree	19	6.3	6.3	88.7
Did Not Use	34	11.3	11.3	100.0
Total	302	100.0	100.0	

More importantly, it helps to explain why both friends and current college students are included among two of the three most useful networks used by the respondents. It also provides another instance of support for the interaction and network postulates of social capital theory.

It should also be noted that in the second grouping of formal and informal networks sorted by rating of their information, college admissions counselor is the only formal network that is ranked as low as the informal networks. This is important as the position of this source appears to not support the postulates and propositions of social capital that appear to explain the responses thus far. For example, college admissions counselors are a weak tie and therefore we would expect that they would be higher on both lists—probably even at the top—because of their close relationship with those resources and the task of searching and selecting a college. Instead they rank at the bottom of both the use list and the rating list. One possible explanation could be with the strength-of-location proposition. In this proposition, the closer individuals are to a bridge in a network, the better social capital they will access to for instrumental action (gaining new information). As mentioned before, the guidance counselor is typically the main conduit between the college admissions professionals and the students in the high school. Therefore, it is possible that the high ranking of the guidance counselor on the use and rating lists is representative of student's access to the bridge between the guidance counselor and the college admission counselor therefore reducing the need of the students to directly use or access college admission counselors thereby resulting in their lower placement on these lists. In sum, survey respondents indicated a greater percentage use of their informal networks but as a whole rated their information lower than that received from their formal networks. This supports the strength-of-weak tie postulate as the formal networks represent weaker ties than the informal. Therefore, by accessing these weak-ties students can gain better information for their college search and selection process. The only exception to this would be their friend's network that also had a very high rating but it also supports the strength-of-strong tie proposition. In this situation, students are engaging with their stronger ties to maintain the information they receive from them. As

these students are most like going through the same college search process at the same time they are likely to have the most up-to-date information on colleges and the search process therefore, making their information more valuable to the student than the other informal networks considered in this study. Therefore, continuing this strong relationship would be beneficial to their college search. Also, the majority of students who used a particular source tended to rate their information average to excellent if they were used. Very few students that used a source rated it as below average or poor.

A bivariate analysis showing correlations between all the formal and informal networks and their ratings (excellent – poor) by the survey respondents was completed to better understand the connections among them. The results are presented in Table 19. The data reveals interesting results. The highest correlation between types of networks occurs within the formal and informal categories. For example, mother has a high correlation with father, sibling and other relatives or .747, .547 and .463 ($p < .01$) respectively. In other words, students who used their mothers (informal) as a source and have used the other informal source tend to rate them as similar. Also, mother does not have significant correlation with other formal networks such as guidance counselor, professional in the field, high school teacher or current college faculty member: .135, .175, .118 and .024 respectively. If we consider a formal network such as college faculty member a similar pattern occurs. Here the college faculty member has significant correlation at the .01 level with other formal networks such as guidance counselor (.418), college admissions counselor (.439), independent college counselor (.506), and professional in the field (.671) but does not have a significant correlation with informal networks such as mother (.024), father (.134), and sibling (.091). There are some exceptions. For example, mother correlates at the .01 level with formal networks such as independent counselor (.403) and religious person/leader

(.524). And the formal resource faculty member correlates at the .01 level with the informal source friends (.278) and with neighbors (.320 at the $p > .05$ level). However the overall pattern these networks/sources suggest that the respondents perceptions (in this case about the usefulness of information provided) about one member of a network (either formal or informal) are in alignment with perceptions about other members of that same type network, formal or informal. This would seem to suggest that there are two very separate networks; formal and informal in operation with students and their rating of information in this process. The results from this analysis also support both the interaction and network postulate for social capital. In relation to the interaction postulate which indicates that interactions occur among actors with similar or contiguous characteristics and lifestyles (homophily principle), the high correlations between mother, father, siblings and other relatives provides a clear indication of such interactions among those familial individuals or informal networks. This interaction by associated characteristics also occurs with the formal networks studied such as guidance counselor, college admission counselor, independent college counselor and professional in the field. Therefore, confirming the interaction postulate by showing such distinct networks (formal and informal) closely associated within one another according to the respective correlations in the responses. This also can be understood in relation to the action postulate where by the respondents in this situation are exhibiting both expressive actions to maintain their relationships and therefore resources with the informal networks to which they are connected as well as instrumental action with the formal networks which is the action taken to gain new resources.

A second observation of these results provides confirmation of several postulates and propositions regarding social capital. Since the previous analysis showed that friends were the most used and trusted source by the survey respondents regarding their college search and

selection it provides a good example for consideration. From Table 19, it can be determined that the rating of friends is most highly correlated with the other sources that were positively rated by the respondents. Those resources were current college students (.488) and high school teacher (.414) and guidance counselor (.308). The correlations were statistically significant ($p < .01$ 2-tailed). Therefore respondents' ratings (positive, neutral and negative) of friends and these formal networks were similar. In addition, this group can be considered as representing weak ties in relation to their role category and therefore provides even further support for Granovetter's social capital proposition: the strength-of-weak ties. As the respondents to the survey indicate the importance of these networks and therefore the importance of the respondent's instrumental action with them is to have better embedded social capital access from those relationships. Also because of who these formal networks represent as professionals and therefore their knowledge of the college search and selection process, the respondents selection of this group as highly regarded resources confirms the existence of the strength of position proposition that maintains the better the position of origin the more likely the actor (survey respondents) will access and use better social capital (Lin et al., 2001b, p. 65). Certainly, this is the intent of the respondents is evident from their rating and high correlation between this group of resources. In summary, this correlation analysis between the ratings for various networks identified as important to the college search and selection process confirm the relationships and their usefulness that are occurring among the respondents and their networks and give support for various postulates and proposition expressed by Lin regarding social capital.

Table 19 *Bivariate analysis for ratings (Excellent-Poor) of network information*

		Mother Rating	Father Rating	Sibling Rating	Other Relative Rating	Guidance Counselor Rating	College Admission Counselor Rating	Independent College Counselor Rating	Professional In Field Rating	Current College Student Rating	College Faculty Member Rating	High School Teacher Rating	Friends Rating	Coach Rating	Religious Person Rating	Neighbor Rating	Other Rating
Mother Rating	Pearson Correlation	1.000	.747**	.547**	.463**	.135	.168*	.403**	.175	.283**	.024	.118	.282**	.125	.524**	.471**	.370*
	Sig. (2-tailed)		.000	.000	.000	.072	.046	.002	.094	000	.817	.128	.000	.366	.000	.000	.010
	N	216	175	149	167	178	142	58	92	160	93	167	182	54	55	76	47
Father Rating	Pearson Correlation	.747**	1.000	.558**	.408**	.252**	.167	.400**	.359**	.294**	.134	.232**	.235**	.296*	.498**	.514**	.164
	Sig. (2-tailed)	.000		.000	.000	.002	.064	.002	.001	.000	.241	.005	.003	.041	.000	.000	.287
	N	175	183	133	152	155	124	55	84	144	78	147	160	48	51	65	44
Sibling Rating	Pearson Correlation	.547**	.558**	1.000	.465**	.146	.184*	.342**	.267*	.374**	.091	.310**	.344**	.212	.450**	.261*	.470**
	Sig. (2-tailed)	.000	.000		.000	.076	.048	.010	.022	.000	.426	.000	.000	.168	.001	.042	.001
	N	149	133	172	137	148	116	56	73	132	78	134	148	44	48	61	45
Other Relative Rating	Pearson Correlation	.463**	.408**	.465**	1.000	.276**	.215*	.194	.419**	.423**	.251*	.376**	.310**	.662**	.505**	.531**	.433**
	Sig. (2-tailed)	.000	.000	.000		.000	.011	.137	.000	.000	.018	.000	.000	.000	.000	.000	.003
	N	167	152	137	195	170	140	60	93	155	89	162	170	50	53	77	46
Guidance Counselor Rating	Pearson Correlation	.135	.252**	.146	.276**	1.000	.432**	.352**	.424**	.314**	.416**	.420**	.308**	.163	.367**	.321**	.083
	Sig. (2-tailed)	.072	.002	.076	.000		.000	.005	.000	.000	.000	.000	.000	.234	.005	.005	.596
	N	178	155	148	170	223	165	63	96	174	101	188	199	55	56	75	43
College Admissions Counselor Rating	Pearson Correlation	.168*	.167	.184*	.215*	.432**	1.000	.685**	.426**	.313**	.439**	.384**	.332**	.098	.204	.309*	.362*
	Sig. (2-tailed)	.046	.064	.048	.011	.000		.000	.000	.000	.000	.000	.000	.479	.159	.010	.014
	N	142	124	116	140	165	184	61	88	149	100	152	166	54	49	68	45

		Mother Rating	Father Rating	Sibling Rating	Other Relative Rating	Guidance Counselor Rating	College Admission Counselor Rating	Independent College Counselor Rating	Professional In Field Rating	Current College Student Rating	College Faculty Member Rating	High School Teacher Rating	Friends Rating	Coach Rating	Religious Person Rating	Neighbor Rating	Other Rating
Independent College Counselor Rating	Pearson Correlation	.403**	.400**	.342**	.194	.352**	.685**	1.000	.394**	.152	.506**	.351**	-.068	.135	.369*	.439**	.260
	Sig. (2-tailed)	.002	.002	.010	.137	.005	.000		.005	.243	.000	.007	.602	.417	.032	.005	.190
	N	58	55	56	60	63	61	66	50	61	52	58	61	38	34	40	27
Professional In Field Rating	Pearson Correlation	.175	.359**	.267*	.419**	.424**	.426**	.394**	1.000	.538**	.671**	.546**	.387**	.624**	.501**	.428**	.496**
	Sig. (2-tailed)	.094	.001	.022	.000	.000	.000	.005		.000	.000	.000	.000	.000	.001	.001	.004
	N	92	84	73	93	96	88	50	107	98	77	96	99	45	43	60	32
Current College Student Rating	Pearson Correlation	.283**	.294**	.374**	.423**	.314**	.313**	.152	.538**	1.000	.430**	.382**	.488**	.508**	.506**	.363**	.440**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.243	.000		.000	.000	.000	.000	.000	.001	.002
	N	160	144	132	155	174	149	61	98	202	107	169	190	55	54	75	46
College Faculty Member Rating	Pearson Correlation	.024	.134	.091	.251*	.416**	.439**	.506**	.671**	.430**	1.000	.565**	.278**	.583**	.286	.320*	.418*
	Sig. (2-tailed)	.817	.241	.426	.018	.000	.000	.000	.000	.000		.000	.004	.000	.060	.014	.011
	N	93	78	78	89	101	100	52	77	107	116	100	103	50	44	59	36
High School Teacher Rating	Pearson Correlation	.118	.232**	.310**	.376**	.420**	.384**	.351**	.546**	.382**	.565**	1.000	.414**	.472**	.235	.435**	.475**
	Sig. (2-tailed)	.128	.005	.000	.000	.000	.000	.007	.000	.000	.000		.000	.000	.084	.000	.001
	N	167	147	134	162	188	152	58	96	169	100	208	191	59	55	75	45
Friends Rating	Pearson Correlation	.282**	.235**	.344**	.310**	.308**	.332**	-.068	.387**	.488**	.278**	.414**	1.000	.399**	.578**	.443**	.518**
	Sig. (2-tailed)	.000	.003	.000	.000	.000	.000	.602	.000	.000	.004	.000		.002	.000	.000	.000
	N	182	160	148	170	199	166	61	99	190	103	191	238	58	55	79	48

		Mother Rating	Father Rating	Sibling Rating	Other Relative Rating	Guidance Counselor Rating	College Admission Counselor Rating	Independent College Counselor Rating	Professional In Field Rating	Current College Student Rating	College Faculty Member Rating	High School Teacher Rating	Friends Rating	Coach Rating	Religious Person Rating	Neighbor Rating	Other Rating
Coach Rating	Pearson Correlation	.125	.296*	.212	.662**	.163	.098	.135	.624**	.508**	.583**	.472**	.399**	1.000	.573**	.581**	.577**
	Sig. (2-tailed)	.366	.041	.168	.000	.234	.479	.417	.000	.000	.000	.000	.002		.000	.000	.003
	N	54	48	44	50	55	54	38	45	55	50	59	58	59	34	39	24
Religious Person Rating	Pearson Correlation	.524**	.498**	.450**	.505**	.367**	.204	.369*	.501**	.506**	.286	.235	.578**	.573**	1.000	.760**	.587**
	Sig. (2-tailed)	.000	.000	.001	.000	.005	.159	.032	.001	.000	.060	.084	.000	.000		.000	.001
	N	55	51	48	53	56	49	34	43	54	44	55	55	34	57	43	27
Neighbor Rating	Pearson Correlation	.471**	.514**	.261*	.531**	.321**	.309*	.439**	.428**	.363**	.320*	.435**	.443**	.581**	.760**	1.000	.560**
	Sig. (2-tailed)	.000	.000	.042	.000	.005	.010	.005	.001	.001	.014	.000	.000	.000	.000		.001
	N	76	65	61	77	75	68	40	60	75	59	75	79	39	43	81	31
Other Rating	Pearson Correlation	.370*	.164	.470**	.433**	.083	.362*	.260	.496**	.440**	.418*	.475**	.518**	.577**	.587**	.560**	1.000
	Sig. (2-tailed)	.010	.287	.001	.003	.596	.014	.190	.004	.002	.011	.001	.000	.003	.001	.001	
	N	47	44	45	46	43	45	27	32	46	36	45	48	24	27	31	53

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

To complete the picture of these relationships and fully address our first research question, as Lin (2001a) suggests, the respondent's use of cybernetworks should provide the most complete picture of these relationships. Indeed, as we have already determined through the review of college search literature and the analysis of our focus groups, students are accessing their formal and informal networks through the use of cyber- and traditional methods of communication. Sometimes these reflect relationships that mirror those in the traditional forms of communication. This is true in instances such as on line social networks where the information channel provides a platform where students interact with their networks as they would in real-time albeit virtually. However, in other instances, such as static Web sites, students' relationships with those sites are devoid of the typical characteristics seen in traditional in-person relationships. Incorporating these types of networks should provide a complete picture regarding how students are engaging with their formal and informal networks through both cyber- and traditional communication methods, and show whether or not the Internet provide an equalizing opportunity for access to social capital. To accomplish this, survey respondent's answers to several questions about various cyber- and traditional networks were analyzed. Traditional networking methods were identified as letters, in-person conversations, and phone compared to on-line or cybernetworking methods of communication such as blogging, instant messaging (IM)/chat, email and social networking sites (i.e., Facebook.com).[26] The results help us access Lin's (2001a; 2001b) assertion that the failure to take such networking activity into account would lead to incorrect finding and therefore interpretations about current students social capital and its implications for social capital theory.

[26] These forms of traditional and cybernetworks were determined from the historical literature review as well as further refined from the results of the focus groups.

Frequency tables were run in SPSS software to determine what traditional and cybernetworks were being used. Second, the consistency of their use by respondents was determined by analyzing the ratings given to their information. Table 20 shows the survey results on the use of the various communication methods.

Table 20 *Frequency and % used and not used for various communication methods*

	Used with someone		Did not use with anyone	
	Frequency	Percent	Frequency	Percent
Email	178	58.9	124	41.1
Instant Messaging	197	65.2	105	34.8
In-Person	282	93.4	20	6.6
Mail/Post	70	23.2	232	76.8
Phone	207	68.5	95	31.5
Blogging	38	12.6	264	87.4
On-line Social Networking	144	47.7	158	52.3

The results show that in-person was the most widely used communication method by students for their college search with 93.4% of indicating that they used it. The remaining ways of communicating with networks in order of greatest to least reported use were phone, instant messaging, email, social networking sites, mail and blogging.[27] Clearly the two more widely used modes of communication with student networks for their college search and selection are more traditional ones (in-person, phone) but the following three modes of communication are connected to cybernetworks (instant messaging, email, social networking). It is interesting to note that the degree of use seems to correspond with the speed of the mode of communications.

[27] It should be noted that instant messaging and phone were gathered separately since prior research tends to collect data on them individually. However, it was noted in the discussion of focus groups that these two communication tools are becoming increasingly difficult to accurately measure as current technology combines them in one communication environment. For example, many students use instant messaging on their cell phones which now easily connect to the internet. Therefore, future research would be best served by clearer separation of these communication methods by their source of delivery (i.e., phone, computer, etc.)

For example, with an in-person form of communication the person is in front of us and we receive and instant response. It is also a dialogue and so follow up questions can be asked and additional information received. Phone as the second most used method of communication is similar to in-person in that it too can eliminate issues associated with distance between two individuals. On the other hand, it lacks the ability of the parties involved in the conversation to benefit from visual cues present with in-person communication. Instant messaging is very similar to phone but the drawback here is that one has to type the message rather than simply speaking it to the other party in the network and lacks the visual cues as does phone as well as voice tone indicators. Therefore, one might speculate that it is less desirable because of the lack of both of these useful communication tools rather than just the visual. It is also important to note that there was only a nine-person difference or 3.3% difference between phone and instant messaging possibly suggesting that IM does not have that much of a perceived difference from the use of the phone among our respondents. In addition, IM does provide emotional lexicons to be used in place of vocal cues present in phone conversation which may be the reason for such a small use difference from the survey respondents. Another rationale might be that technology advances have allowed for IM to be used via phones and could complicate our analysis between the two forms of communication. Next, email allows questions to be asked but as students indicated in the focus groups, it is not "instant." The sender does not know if or when the other party in their network has received the email and the response could come at an unknown time therefore making it a less desirable mode of communication. Social networking sites are more complicated because there are multiple modes of communication within them. One can do a private email, post a message to the persons wall thereby making it public to the persons group of friends or to everyone in a social networking site and there are instant messaging options as well. How a

student uses the Web site depends on his/her knowledge about the site's options. Therefore, preference for a method of communication seems to correspond with the number of cues available between the two parties in addition to the immediacy of those cues if present. In other words, the degree to which a communication method conforms to the major consideration for social capital such as norms and their influence, the factors about the information channel itself and the degree of closure associated with it drives how often it is used.

More specifically, additional insight about on line social networking site usage by students was found. Similar to the focus groups, the on-line respondents indicated equal use of on-line social networking sites to connect with new and know networks. Tables 21 and 22 show the individual breakdown of the student's agreement with the statements presented in questions 30 and 29. Among all respondents 36.1% indicated that they were neutral, agreeing or in strong agreement with the statement, "Joining new on-line social networks (for example, College X's Facebook Group, Your High Schools College Search Facebook Group, etc.) provided me important information for my college search." Similarly, 38.7% of the respondents indicated similar levels of agreement with the statement, "Using my established on-line social networks (for example, you Facebook circle of friends) provided me important information for my college search." Also, students are tapping into new networks through the cyber- environment at a similar rate as their established networks evidenced by the use rate of 56.3% for established on-line social networks compared to the 53.3% rate for new on-line social networks. Therefore, we can state that similar to our findings in the focus groups, the on-line survey shows almost equal percentages of students seeking out new networks/sources through the on-line environment as there are those seeking to connect with their established on-line social networks. This is an important finding as it provides one form of cyber-networking (online social networking or

Facebook.com) and provides context for the action, strength-of-strong-tie and strength-of-weak-tie propositions in this new environment. The results tell us that the respondents are using this type of online social networking in very similar ways as they use traditional social networking methods. Students are engaging in purposive action. In relation to their strong ties such as friends and family, 56.3% of the respondents indicated using it to maintain their relationships with their established networks regarding the college search and selection process and 53.3% for instrumental action or gaining new information with their weaker ties or new networks.

Table 21 *Question 29: Respondents agreements with usefulness of new on-line social network groups for college search*

	Frequency	Percent	Valid %	Cumulative %
Strongly Agree	11	3.6	3.6	3.6
Agree	33	10.9	10.9	14.6
Neutral	65	21.5	21.5	36.1
Disagree	40	13.2	13.2	49.3
Strongly Disagree	12	4.0	4.0	53.3
Did Not Use	141	46.7	46.7	100.0
Total	302	100.0	100.0	

Table 22 *Question 30: Respondents agreements with usefulness of established on-line social networks for college search*

	Frequency	Percent	Valid %	Cumulative %
Strongly Agree	16	5.3	5.3	5.3
Agree	44	14.6	14.6	19.9
Neutral	57	18.9	18.9	38.7
Disagree	37	12.3	12.3	51.0
Strongly Disagree	16	5.3	5.3	56.3
Did Not Use	132	43.7	43.7	100.0
Total	302	100.0	100.0	

In addition, Table 23 below shows the cross-tabulation of these two questions. The results show a very strong agreement between the responses as demonstrated by the Pearson's R of .843 and the Spearman correlation .838 and that it the relationships are not due to chance as indicated by the chi-squared = .000 (p <.001). The combination of these results confirms for us that although on-line social networking is not the most used network for students in their college search, there appear to be statically significant similarities between the use and usefulness of on-line social networks with and those of established networks as well as with new networks. In addition, similar percentages of respondents found these social networks sites and their assistance with the college search and selection process to be useful, not useful and neutral toward their usefulness. Thus, no strong indication from the overall respondents was found as to the results of their engagement with both types of relationships (strong and weak) in relation to college search and selection.

The remaining two traditional and cyber-networking mechanisms are mail/letter writing that 23.2% or 70 students indicated that they used and blogging that 12.6% or 38 students indicated that they used. These two forms of communication are used very little by the respondents. Therefore, considering the highest used methods of communication among the

Table 23 *Cross-tabulation for usefulness of new vs. established on-line social networks in college search*

			Usefulness of established on-line social networks						
			Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Did Not Use	Total
New Social Network Usefulness	Strongly Agree	Count	9	2	0	0	0	0	11
		% within New Social Network Usefulness	81.8%	18.2%	.0%	.0%	.0%	.0%	100.0%
	Agree	Count	5	19	6	1	0	2	33
		% within New Social Network Usefulness	15.2%	57.6%	18.2%	3.0%	.0%	6.1%	100.0%
	Neutral	Count	1	17	40	3	0	4	65
		% within New Social Network Usefulness	1.5%	26.2%	61.5%	4.6%	.0%	6.2%	100.0%
	Disagree	Count	0	3	5	29	1	2	40
		% within New Social Network Usefulness	.0%	7.5%	12.5%	72.5%	2.5%	5.0%	100.0%
	Strongly Disagree	Count	0	0	0	2	10	0	12
		% within New Social Network Usefulness	.0%	.0%	.0%	16.7%	83.3%	.0%	100.0%
	Did Not Use	Count	1	3	6	2	5	124	141
		% within New Social Network Usefulness	.7%	2.1%	43%	1.4%	3.5%	87.9%	100.0%
	Total	Count	16	44	57	37	16	132	302
		% within New Social Network Usefulness	5.3%	14.6%	18.9%	12.3%	5.3%	43.7%	100.0%

survey respondents, there is an overall preference to use traditional methods (in-person and phone) followed by several cyber-methods of communication (IM, email, online social networking).

Thus far, the data analysis has revealed several findings that incorporate the use of cybernetworks into social capital development by students in the college search and selection process. First, there are several findings that relate to the formal and informal networks that were considered.

Formal compared to informal network usage and embedded resource ratings

1. Respondents overall have indicated that they are using all forms of formal and informal networks to assist them with their college search and selection process.

2. Among all respondents there appears to be no clear overall *use* of the formal or informal. However, among the users of the formal and informal it has been determined by the respondents' *rating* of the various individuals listed in the survey that with the exception of friends, *formal* networks are seen by the respondents to provide *better embedded resources/ information* about the college search and selection process than the informal ones.

Second, several findings were detected in relation to traditional and cybernetwork use among all respondents as well as some statistically significant findings with student place of origin.

Traditional compared with cybernetwork usage

1. Among all respondents the most used method of communication with their networks tends to be traditional ones followed by cybernetworks.
2. Respondents prefer those methods of communication that manifest the most multi-stranded forms of interaction. Second, the immediacy of access to the embedded resources appears to be a driving factor in relation to the amount of respondents that use a particular method of communication.

Having established similarities and differences between informal and formal networks as well as between traditional and cyber-methods of communication during the college search and selection process, it is also important to understand the intersection of these two as well and their incorporation into the theory. In order to do this, frequencies of communication use (traditional and cyber-) by means of the identified formal and informal networks were completed using SPSS software. Table 24 shows the results. The first three columns in light gray represent traditional methods of communication and the last four represent the cybernetworks examined. The first

five rows of this table represent the informal networks used by students and the remaining rows represent the formal networks analyzed. As indicated by the total for each column, it can be stated that in-person communication was the most used overall by the respondents in the college search and selection process as represented by the *Total Use Instances* row or 1,497 instances. Next would be phone (520 instances) and then post/mail (118 instances). Therefore, in-person is the most used form of traditional communication between students and their networks. Also phone and to an even greater extent post/mail are dramatically lower in their use compared to in-person communication. Looking down each column of these three traditional communication methods (in-person, phone, mail) the use for each method is displayed next to each informal and formal networks[28] with which each appears to be used. For example, in-person conversations are widely used with every informal network with the exception of neighbors. The number of instances recorded for using neighbors (38) is low in relation to the other informal or for that matter formal networks considered, however, looking across the neighbor's row in Table 24 it is clear that when students use them it is highly likely that they will do it in person. Recalling our earlier analysis of immigrant and natives' use of neighbors, a greater percentage of immigrants used their neighbors than natives. In addition, immigrants rated the information from neighbors better than the natives did. Therefore, we can conclude that immigrants represent the greatest percentage of those in the neighbor column and therefore are highly likely to engage with them in-person. By observing the lower portion of the rows on this table that represent the formal networks which can be defined by their role category to be weak ties, it is noted that in-person is a widely used traditional communication method among the responding students and their formal networks. The formal networks with which students indicated the most in-person communication

[28] It should be noted that the first six networks listed represent the informal networks and the following nine represent the formal networks identified for this study.

were guidance counselor (193), high school teacher (139) and current college student (104) respectively. It should be noted however that the in-person communication was the most used method of communication overall among the remaining six formal networks looking across all traditional and cyber- communication methods. Within those six networks we can also see that not very many students that responded indicated that they used independent college counselors, professionals in the field, athletic coaches, or religious persons but if they did, it is highly likely that they would communicate with those individuals in person than any other method of communication.[29]

The networks where in-person communication was reported the most was with mother (194 instances). *Figure 20* shows the steep linear relationship for in person interaction informal networks (mother, father, sibling, other relative, friends, neighbors represented by markers 1–7) and formal networks (guidance counselor, college admissions counselor, independent college counselor, professional in the field, current college student, college faculty member, high school teacher, athletic coach, religious person represented by markers 8–15). With the exception of college admissions counselor, current college student and high school teacher, most of the formal networks are at the lower end of *% used* for in person communication. However all of the informal are located at the high end of usage showing an inverse relationship between use and type of network moving left to right or informal (strong ties) to formal (weak ties) on the X axis in *Figure 20.* The three levels of percentage used (high, medium, low) as explained here also

[29] Because there are very few instance of use among the survey respondents, further exploration of these formal networks use is statistically limited. In addition comparing usage later between native and immigrant students may yield numbers too small for statistical analysis. However, it is important to continue listing these formal networks in future research as they represent networks with which students engage during the college search and selection process even in the smallest degree. Therefore, how, when and through which traditional and cyber- communication methods students will engage with them in the future or to see their increase or decline in usage are worthy of continued consideration.

support the concept of closure described by Coleman and Lin. In other words, the respondents, in relation to in-person relationships for their college search communicate the most with a circle of

Table 24 *Formal & informal networks compared with use of traditional and cyber- communication*

	In Person % Used	**#**	**Post/ Mail % Used**	**#**	**Phone % Used**	**#**	**Email % Use**	**#**	**Instant Message % Used**	**#**	**Blogg-ing % Used**	**#**	**Social Net-work % Used**	**#**
Mother	60.90%	194	2.00%	6	21.20%	64	10.90%	33	5.60%	17	0.70%	2	0.30%	1
Father	48.70%	147	1.00%	3	14.20%	43	6.60%	20	2.60%	8	0.30%	1	0.30%	1
Sibling	46.40%	140	1.00%	3	19.90%	60	15.60%	47	17.50%	53	1.70%	5	7.60%	23
Other Relative	40.10%	121	1.70%	5	20.20%	61	10.60%	32	11.60%	35	0.30%	1	5.00%	15
Friends	63.90%	193	3.60%	11	38.10%	115	30.10%	91	56.30%	170	7.30%	22	43.40%	131
Neighbors	12.60%	38	0.70%	2	1.30%	4	0.30%	1	0.70%	2	0.30%	1	0.70%	2
Guidance Counselor	60.60%	193	4.00%	12	11.90%	36	19.20%	58	4.60%	14	1.30%	4	1.30%	4
College Admissions Counselor	31.50%	95	13.60 %	41	18.20%	55	20.20%	61	3.30%	10	1.70%	5	0.30%	1
Independent College Counselor	5.00%	15	1.00%	3	2.30%	7	2.00%	6	1.30%	4	0.00%	0	0.00%	0
Professional in the Field	12.30%	37	1.00%	3	2.30%	7	2.60%	8	1.70%	5	0.70%	2	0.00%	0
Current College Student	34.40%	104	2.00%	6	8.60%	26	8.60%	26	11.30%	34	2.00%	6	8.30%	25
College Faculty Member	12.90%	39	4.30%	13	7.90%	24	8.30%	25	3.00%	9	1.00%	3	0.00%	0
HS Teacher	46.00%	139	1.30%	4	4.60%	1	11.90%	36	2.60%	8	1.30%	4	1.30%	4
Athletic Coach	6.30%	19	1.70%	5	0.30%	1	1.30%	4	1.70%	5	0.00%	0	0.30%	1
Religious Person	7.60%	23	0.30%	1	1.00%	3	1.70%	5	0.70%	2	0.00%	0	0.30%	1
Total Use Instances		1497		118		520		453		376		56		209

NOTE: **Light Gray Boxes =** Traditional Networking Communication Methods **Dark Gray Boxes =** Cybernetworking Communication Methods **Black Boxes =** Formal or Informal Network with which corresponding traditional or cybernetwork was most used.

informal individuals that would appear to have the highest degree of closure with the students (mother, father, sibling, other relatives, and friends). The second group of networks with which students have an in-person relationship for their college search and selection process are high school teacher, college admissions counselor and current college students which represent a portion of the formal networks reviewed in the study. However, these three seem to represent a group within the formal networks tested that overall the respondents use to a greater extent than the other ones listed here and therefore suggest a higher degree of closure with their network than athletic coach, or religious person, etc.

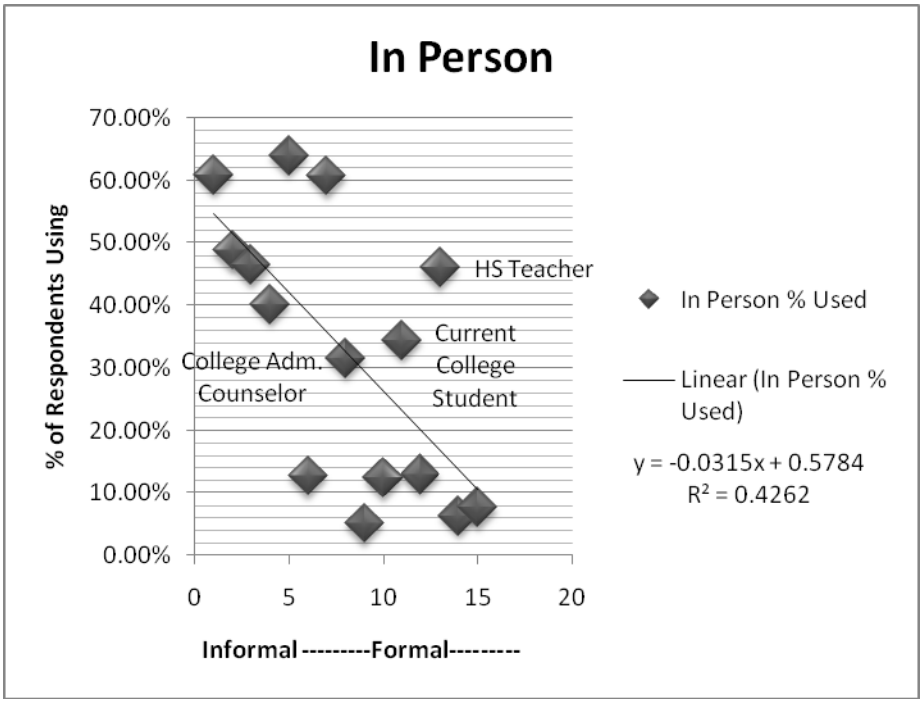


Figure 20. The linear relationship between % of respondents using in-person communication with informal and formal social networks.

Postal or mail communication, listed in the second column was the second to the least used method of communication among all respondents as indicated by 118 mentions of being

used with all networks and the least of all traditional network methods. Within those instances mail appears to be used the most with college admissions counselors (41 instances); a formal network. Significantly less instances were noted with other formal networks; college faculty member, guidance counselor and one informal network; friends. Therefore, the method of communication is mainly used with admissions counselors as shown in *Figure 21* and most likely reflects students corresponding through the mail regarding application materials which to some degree is still required at CUNY for admissions. Also, although used very little in comparison to all other forms of traditional and cyber- relationships its use by our respondents appears to be mainly with formal networks regarding their college search and selection process.

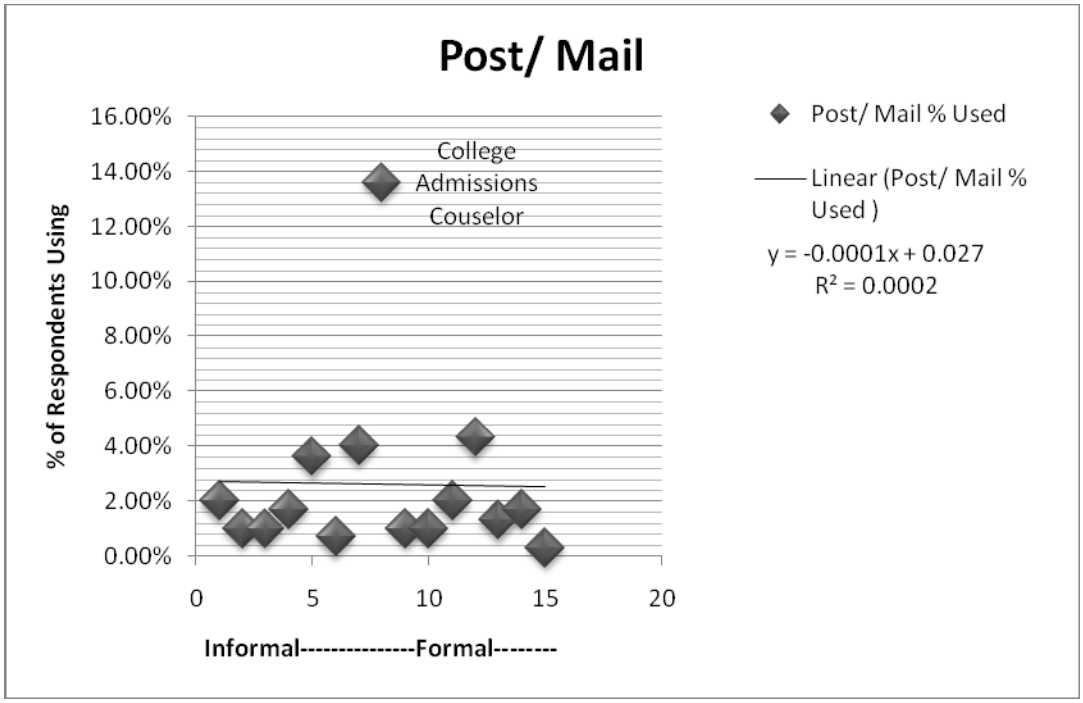


Figure 21. The linear relationship between % of respondents using postal communication with informal to formal social networks.

The last traditional method of communication surveyed was the use of the phone. In relation to this traditional communication form a similar slope to the linear relationship in *Figure 22* was found for in-person communication (*Figure 20*). Here too the phone is more highly used by students among the informal networks compare to the formal networks. But, compared to in-person the percentage use is lower. For example, with the exception of friends the percentage use for all other formal and informal networks was at 25% or lower. In contrast to this, in-person communication was at the 30–70% usage level with more than half or 9 out of the 15 informal and formal networks. As indicated by the blacked box in the row for phone in Table 24, this traditional method of communication was used the most with friends and significantly more than any other informal or formal network.

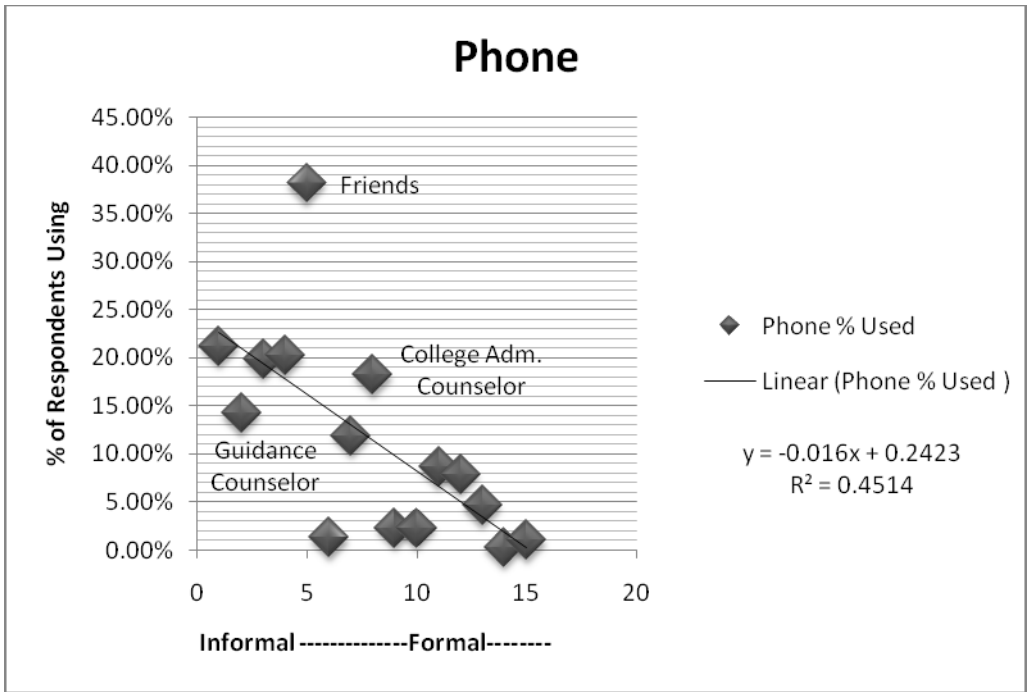


Figure 22. The linear relationship between % of respondents using phone communication with informal and formal social networks.

The last four groups of darker gray shaded columns on the right side of Table 24 represent the cyber- communication methods that were investigated in this study. Again, the total column across the bottom of the table tells us the total number of instances that students stated they used that particular communication method for each of the various formal and informal networks listed in the first column. The blackened boxes show the instances of most contacted network for each communication method. What is interesting to note here is that with the cyber- forms of networking friends appear in the highest position for each and every cyber- communication method compared to the traditional communication methods in which the highest position varied among formal and informal networks rather than a consistent one therefore, providing evidence to Lin's assertion that the cyber- environment is different from the traditional one and has implications for how social capital occurs. Clearly, there is something about the relationship between our respondents and their friends that leads them to consistently have the highest percentage interactions for all cyber- communication methods as it relates to their college search and selection process and not in all the traditional methods of communication except one; the phone. However, as the phone also provides access to email, the Internet, instant messaging via text, etc, the clear understanding of the phone response and its relationship with friends can be complicated to unravel in relation to the data collected for this research. Further, as already discussed, friends are the most used by our respondent and have been implicated as providing the best information to the respondents about their college search and selection process. In relation to the cyber- environment they are also the individuals most contacted through this communication method. This gives further support to the notion of the strength of strong ties because students are communicating mostly with a particular informal network: their friends as defined by their role category. Also, it supports the interaction postulate by showing the

respondents interaction in the cyber-space occurring mostly among those with similar characteristics represented again by their friends.

Figure 23 shows that students appear to use email across all informal networks and slightly less so with formal networks. The only exception to this fairly consistent percentage use is friends which is the most pronounced at 30%. Among the informal networks, neighbor was the only exception to this consistent level of higher use of email by students which was all but non-existent in this communication method.[30]

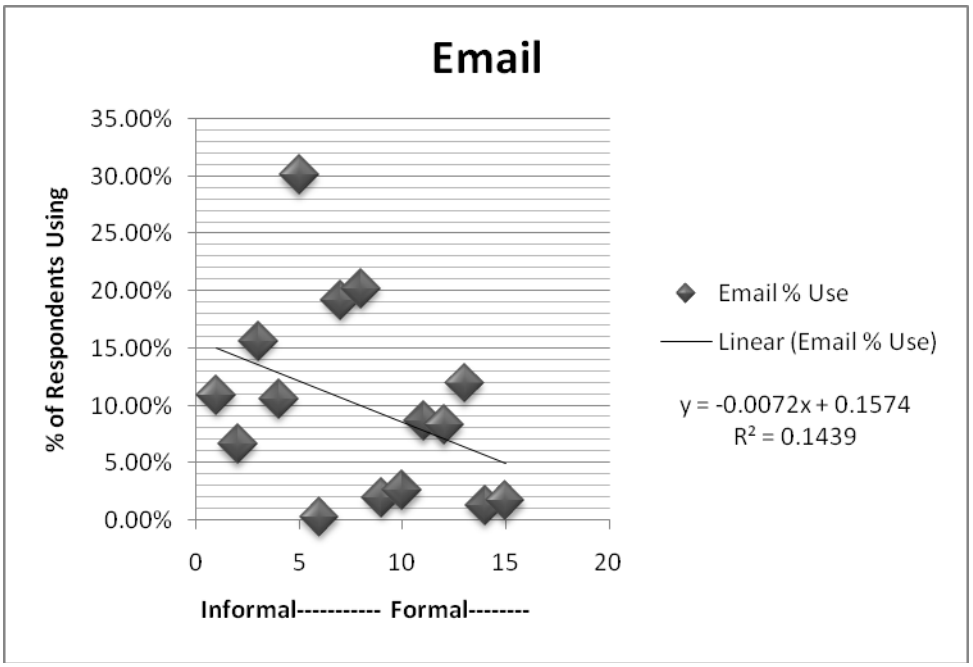


Figure 23. The linear relationship between % of respondents using email communication with informal and formal social networks.

In addition, as seen in *Figure 24* students indicated less diversity of their instant messaging use across their formal and informal networks. Looking back at Table 24, the highest use was with friends and then clustered percentages in the teens with siblings, other relatives and

[30] As was mentioned previously, students indicated that from the small group of students who did use neighbors; this was typically done through in person contact.

current college students and then another cluster in the 2–3% range around mother, guidance counselor, college admissions counselor, father, college faculty member and high school teacher. Clearly instant messaging appears to be used most with the informal networks on the whole. It is least used with the formal networks with the exception of current college students.[31]

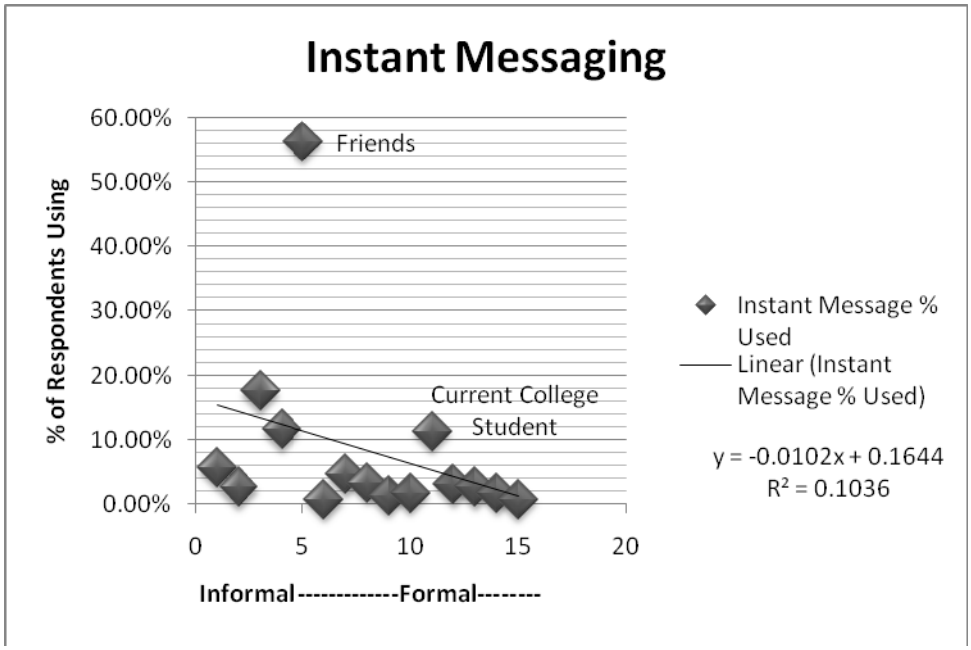


Figure 24. The linear relationship between % of respondents using IM communication with informal and formal social networks.

Blogging was the cyber- communication method least used as can be seen in *Figure 25.* The highest use was slightly over 7% or 22 students indicating use of blogging with friends. In all other formal and informal network instances it was 2% use or lower. It should be mentioned however, that the second highest percentage used was associated with current college students. As many colleges today have currently enrolled students posting blogs on the admissions Web sites, it is possible that this formal networks rating is a reflection of this typical admission

[31] As noted previously, it is speculated that a number of the respondent have friends who are currently enrolled at the institutions they were considering. Therefore, this may cause overlap between the friends and currently enrolled college student.

marketing technique where prospective students can get a sense of a day-in-the-life of a currently enrolled student by reading their blog. There were only 56 overall mentions of use across all the respondents that indicate a very low communication usage rate between the students and their formal and informal networks and make it difficult to measure its use and impact with our research questions.

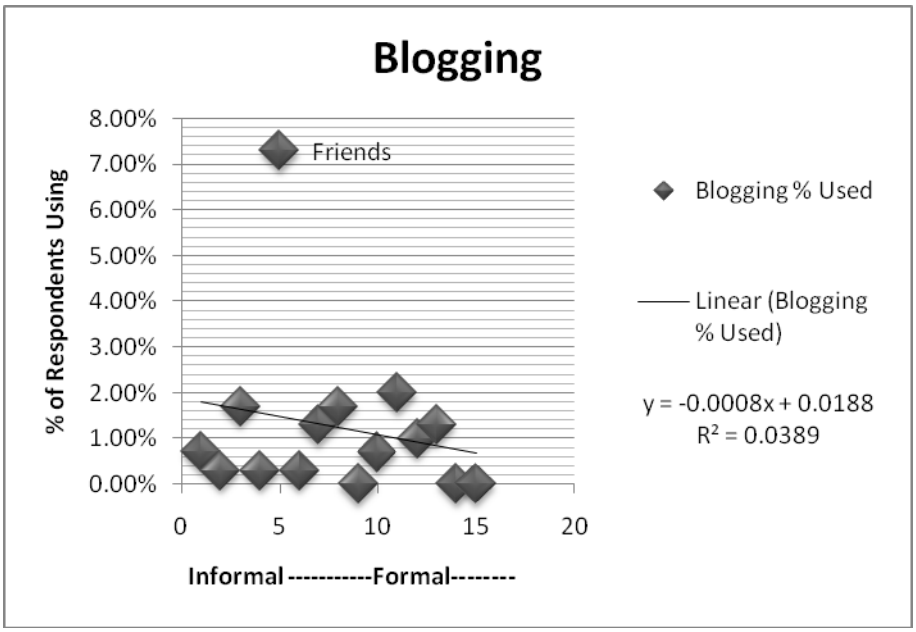


Figure 25. The linear relationship between % of respondents using blog communication with informal to formal social networks.

On-line social networking (see below *Figure 26*) showed low levels of usage across the various formal and informal networks but still slightly favored overall with informal. For example, students indicated significantly greater use of this communication method with their friends and noticeable use with their siblings (7.6%), current college students (8.3%) as well as other relatives (5%). This relationship seems to indicate that this particular form of on-line social networking such as Facebook.com seems to be used with others around the age of the respondent as evidenced by its percent usage with friends, sibling and current college students. With this commonality among those three networks, we might suspect that the network “other relatives”

might be referencing cousins who are themselves similar in age to our respondents. It is important to note here as well that although Group (2007) indicates that 75% of college bound students are active Facebook.com users, these finding suggest they it is still not the mode of communication with which they are engaging their networks overall during their college search with the exception of other friends. Among this study's respondents, only 45% of our respondents indicated using it for such a purpose compared to the 75% of students who are active in this cyber- environment.

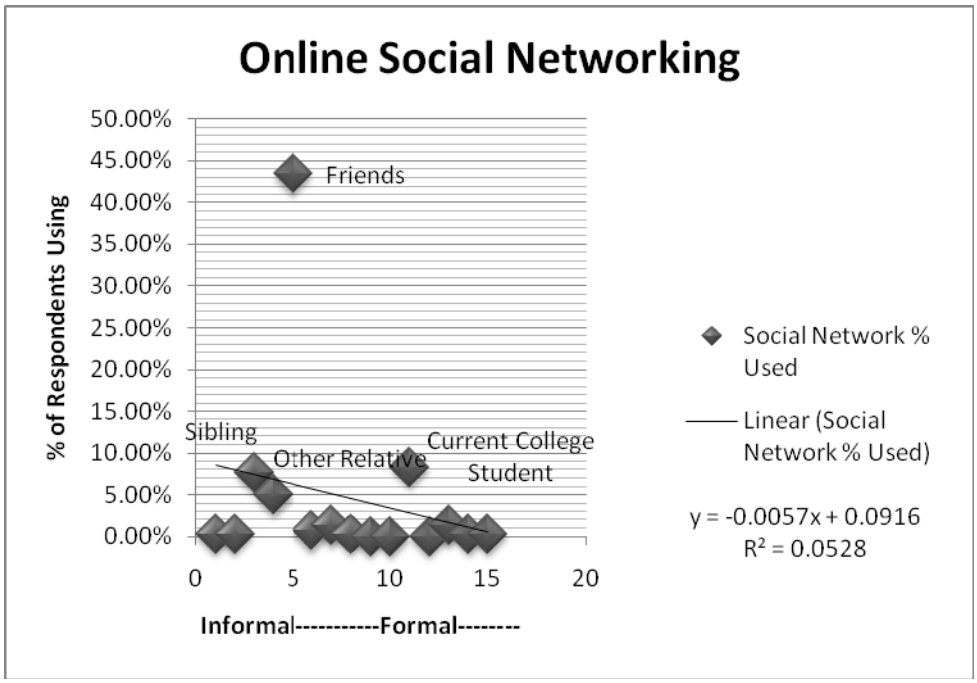


Figure 26. The linear relationship between % of respondents using on-line social networking communication with informal and formal social networks.

In order to see these three traditional forms of communication next to one another, *Figure 27* combines the traditional methods of communication (in-person, postal mail, phone). In viewing this figure of the collective traditional networking communication methods used with the informal and formal college search and selection social networks, two distinct relationships

are visible. First, among the informal social networks there are clear distinctions between each traditional method and its respective high use, middle use and low use giving a clear indication for our respondents overall preference. Second, among the formal networks the percentage use of the traditional networks is more consistently low. Although there is a preference for in-person communication when formal networks are used, there is less of a dramatic percentage use difference between the three forms of traditional communication methods.

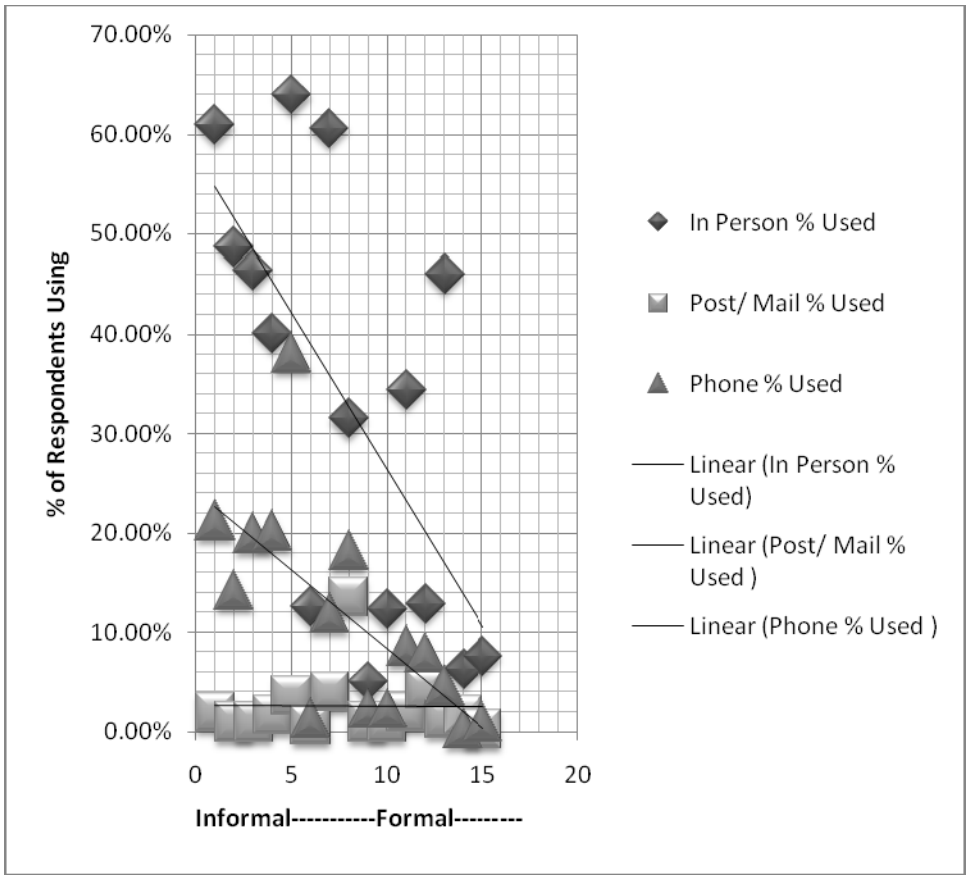


Figure 27. The linear relationship between % of respondents using traditional communication with informal and formal social networks.

Reliability for the observed affinity toward the use of in-person communication was tested further by another question in the survey. Students read the following statement and then

indicated their agreement with it. “In-person conversations provided me more useful information during my college search than any other method of communication.” *Figure 28* shows the results. Fifty-three percent agreed or strongly agreed with the statement and 27% neither agreed nor disagreed. Ten percent disagreed and interestingly 10% indicated that they did not speak with anyone in-person about their college search. Similar to the primary positioning of this communication methods in *Figure 27*, the responses to this statement confirms the importance of in-person networking among the respondent students for their college search process in relation to formal as well as informal networks.

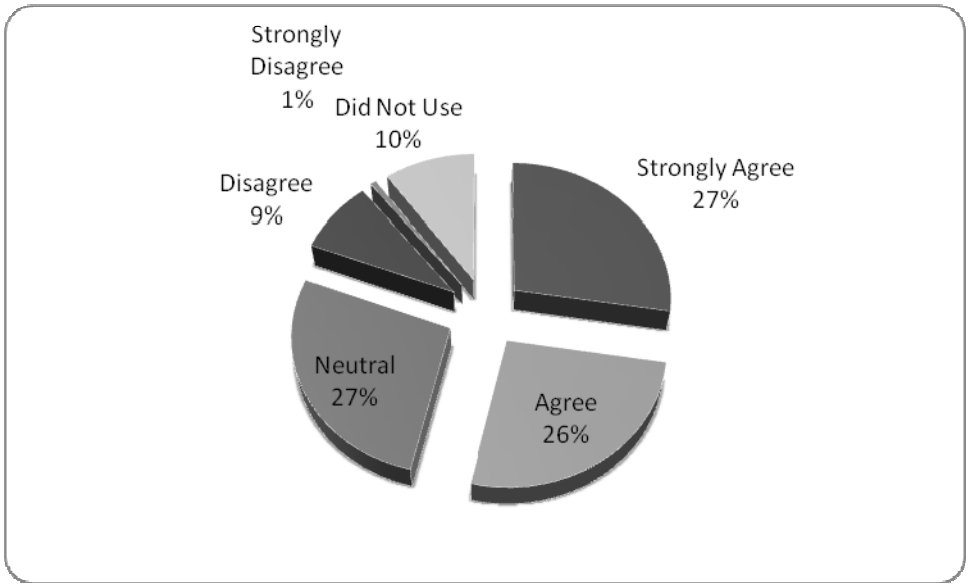


Figure 28. Responses to question 27: Please indicate your level of agreement with the following statement: "In-person conversations provided me more useful information during my college search than any other method of communication."

In relation to the collective cybernetwork methods of communication, *Figure 29* shows email was the most used cyber- communication method by the respondents. The relationship between percentage of email use across the informal and formal networks is represented by the

highest linear line in the *Figure 29* compared to the other cyber- communication methods tested. It is also most parallel to the relationship between on-line social networking communication method across the informal and formal networks suggesting our respondents overall agreement between email and on-line social networking use. Recalling this study's focus group finding that student's expressed affinity towards using on-line social networking such as Facebook.com because it allowed them to do IM (instant messaging) therefore providing an immediate response, it's low overall usage from the survey respondents is somewhat surprising. However, it is also not surprising considering that students use of on-line social networking is done most heavily with their peers. This also supports the findings of the Eduventure (*College Search and the Millennial Generation*, 2007) research that found students to perceive these on-line social networking environments as ones where their generation "hangs out" and it is "creepy" that older individuals are present let alone wanting to engage with students through these communication methods (Young, 2008). Therefore, in relation to the propositions and postulates put forth by Lin several points can be made. First, in relation to strength-in-strong ties, the respondents are choosing one particular strong tie over all others with their use of friends and therefore maintaining their resources with them in their social actions. Also the interaction postulate assists us in the explanation for use of friends in the cyber-environment because of their similar and contiguous characteristics of resources in relation to college search and selection. Finally, the strength-of-location is satisfied as the respondents friends have established or have networks assisting them with their college search and selection. Therefore, the survey respondents connecting with their friends provide better social capital they will access for instrumental action. However, who the respondents are choosing to correspond with directly through cyber-communication on the whole does not represent those individuals that are unknown to the

student for the most part. Therefore, we cannot conclude that they are using these cybernetworks in ways that equalize their opportunity for better social capital by way of instrumental action.

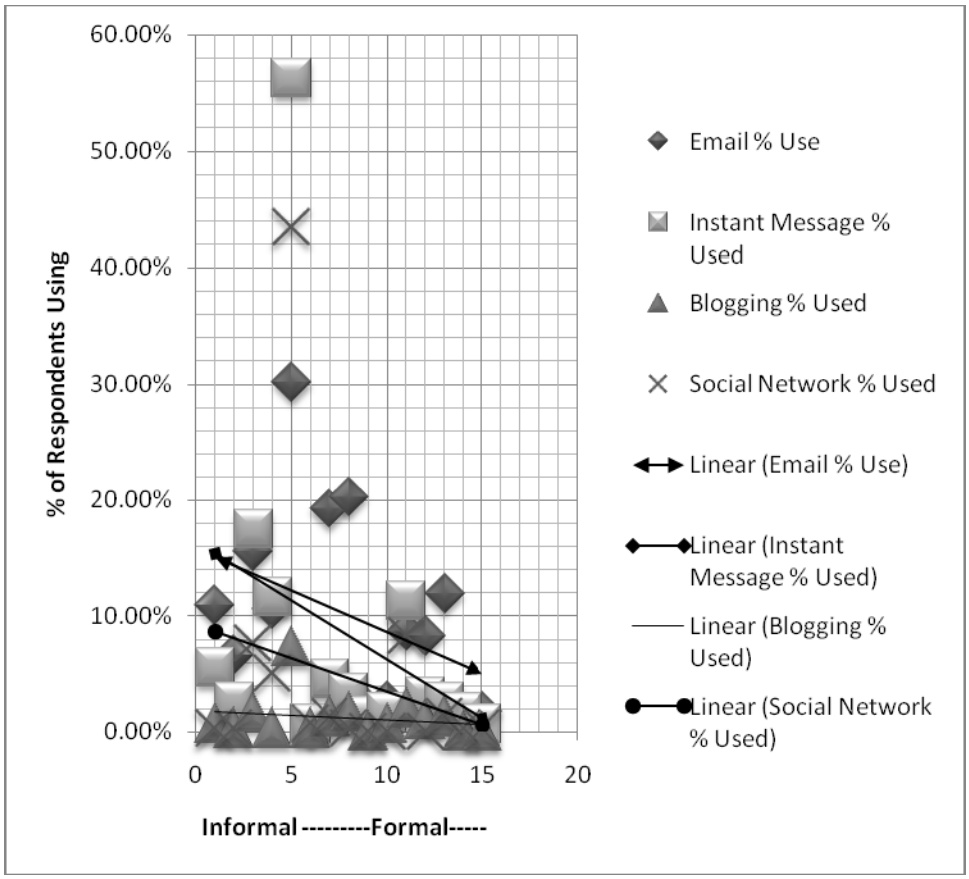


Figure 29. The linear relationship between % of respondents using cyber- communication with informal and formal social networks.

In sum, we have been able to determine several things. First, the on-line survey respondents have indicated greater use of traditional communication methods with all their networks (formal and informal). Respondents engage with informal networks more than formal networks for their college search and selection process through both traditional as well as cyber-methods of communication. Within the formal as well as the informal networks, a greater percentage of students indicate use of traditional communication methods versus the cyber-

methods however, cyber- methods of communications are an important ways with which students are engaging with their formal and informal networks overall and more specifically with their peers as evidence by the respondents percentage use with friends. Focusing specifically on cyber- methods of communication across formal and informal networks, the data indicates that email is most commonly used. However, in relation to the respondents peers (friends and current college students) instant messaging was the most used cyber- methods for those respective networks. In addition, within the informal networks, respondents indicated similar percentage use of the various cyber- communication methods in relation to friends, sibling, mother and father respectively. In other words, they used email, IM, blogging and on-line social networking most with friends, then second most with siblings, then other relatives, etc. Conversely, with the exception of current college students, there was less diversity of cyber- communication methods used with formal networks by the survey respondents. In other words, the respondents were mainly using email as the preferred cyber- communication method with their formal relationships/networks. Again, the only exception among the formal networks was current college student and as explained earlier this corresponds to the notion that peer affiliation or norm issues about age seem to explain the diversity of cyber- communication methods used with this particular formal network compared to the other formal networks.

Therefore, it can be concluded as well as represented in *Figure 30* below, that our survey respondents in general used the informal networks more for the college search and selection process than their formal networks. Also that they cited greater use of the traditional networks over the cybernetworks across most of the informal and formal networks listed in the survey. Finally, greater differences of percentage use were detected among the traditional forms of communication with formal and informal networks than among the cybernetworks investigated

with regard to the on-line survey respondents. Therefore, it satisfies many of the postulates and propositions for social capital theory that are present in traditional relationships but it has not yet shown any differences which can be attributed to the idea that these cybernetworks present equalizing opportunities for respondents.

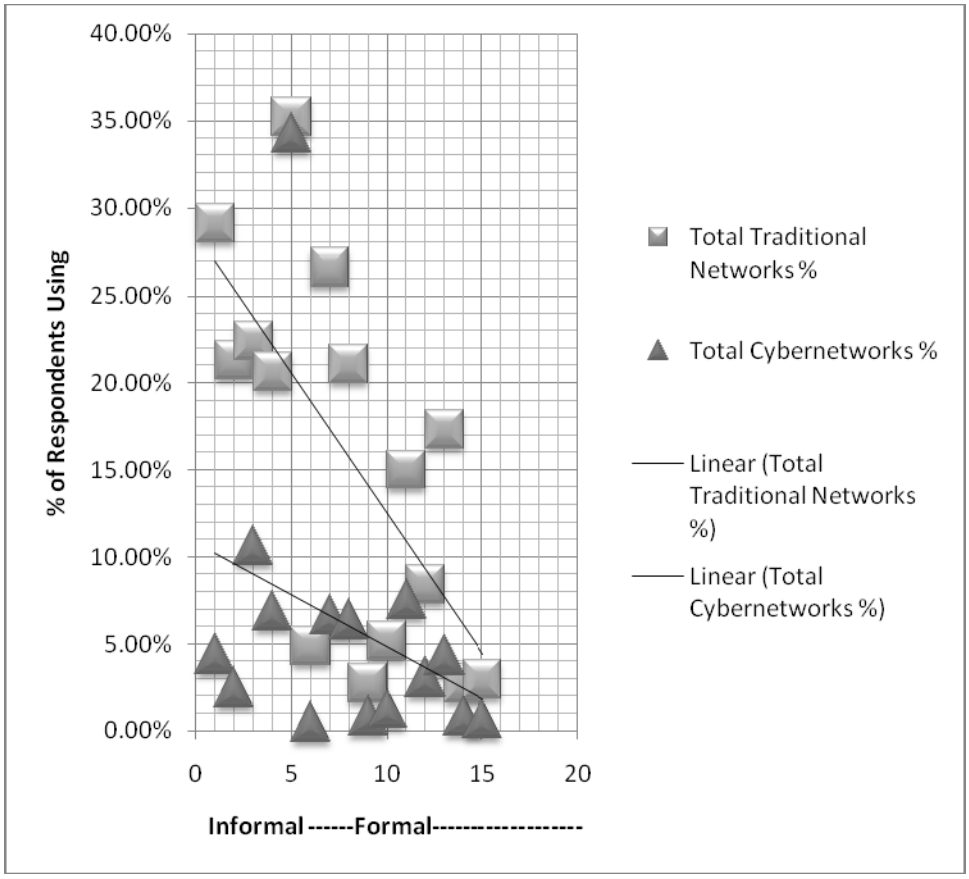


Figure 30. Overall % use of traditional vs. cybernetworks for informal and formal sources.

Question 38 from the survey also considered the relationship between student's uses of on-line communication methods with their networks. In particular, it was constructed to further understand blogging, chat and include static Web site usage as well as the concept of ownership of the information contained in those sources. For example, blog was separated into public blog, college blog, college search company owned blog. This was done to see if the ownership of the

cybernetwork revealed any particular desire to use or not use the cybernetwork. The issue of a cybernetworks ownership arose from the focus groups and thus was factored into the on-line survey instrument. Also, Web site had not been assessed up to this point as the focus was more on interactive web application but was added here to determine the hierarchy of a static Web site in relation to the other more interactive cybernetworks or forms of cyber- communication. These Web sites are also closest to the cybernetworks which Lin indicated would be devoid of norms, social status and closure issues found in other more traditional relationships and therefore important to our theoretical considerations. The static Web sites do constitute a social network where students are investing or engaging with them, some in interactive ways such as sharing their preferences for certain college characteristics in order to capture embedded resources from that site (specific college lists that meet these required college characteristics) and acquire a return on their investment (increased number of colleges to consider or more information about the colleges they are already considering). It should be noted that students were first asked if they had access to a computer and if they used the computer in general for their college search. Only those students who answered positively to both questions were presented with question 38. In addition to assessing blog, chat and static Web sites, the question also incorporated personal email, personal Facebook.com and personal IM or TM (Text Messaging). The two issues explored in this question were the student's usage as well as the issue of trust in the information obtained as measured by their usefulness rating. For example, blogging was broken down to *public blog/message board not directly related to the college search process; blog/message board sponsored by a college/university*; and *blog/message board sponsored by a company owned college search resources (i.e., The College Board, TheU.com, etc.)*. If students indicated

that they used any one of these sources, they were asked to rate their information from excellent to poor or they could indicate that they did not use it at all.

Figure 31 and Table 25 show the responses to this question. Several things are important to note. First, the responses to this question confirm the overall low use of the Internet and those sources contacted through the Internet as a communication method by students. In addition, it reiterates the respondent's use of the static Internet Web sites as a very reliable source of information as indicated by their high use and high information rating of *college Web site, company Web site* and *public Web site* for the college search and selection process. The results for these three networks also reiterate what was found in the focus groups when students were asked to indicate the attribute for these sites which increased their trust in the information provided. A focus group student stated, "It is the .edu that tells me this is an accurate site and I can trust it." The student was referring to the Web sites constructed by the colleges themselves as they contain the .edu extension to their web addresses. The use of these sites again supports the strength-of-weak-ties proposition as the Web sites have less intimacy than other cyber-communication methods such as personal email or personal facebook.com and therefore provides access to its better social capital than that provided by the other before mentioned networks for instrumental action or rather to gain new information for the college search and selection process. What is interesting to note though is that blogs and chats which were run by college search companies were used more frequently and whose information was rated better by students. However, with a static Web site the reverse was found as the college site was used and trusted more compared to the company sponsored college search site. This can be understood by considering the students perception as to who is the provider of the information. Chat and blogs on the sites for colleges, college search companies and public sites accessed by students tend to

be written by or hosted by students. Therefore, it is reasonable to conclude that the respondents would be more likely to trust/use students on sites not associated with any particular college and permit them to gain a less biased opinion. Conversely, when looking for specific information about a college which is simply informational or static such as student/teacher ratio and not experiential such as whether the food is good or not, students in the focus groups indicated their preference for college sites over any other site because of "the college's proximity to the information." Therefore, the focus group information provides support for the interpretation of the priorities here. However, there are more fundamental issues with static Web sites in consideration of social capital and its propositions and postulates. The problem is that nothing separates the actor (the respondents to our survey) from accessing the resources in these Web sites other than their ability to go on to the Internet and get it. Therefore, the relationship between the survey respondents and static Web sites such as TheCollegeBoard.com satisfies the definition of social capital since the Web sites contain very useful embedded information that can be accessed by the respondents. It satisfies the action postulate as the students are engaged in instrumental action or gaining those resources. The social-capital proposition which states, "the success of action is positively associated with social capital" (Lin et al., 2001b, p. 75) is problematic as it implies that the action can also be unsuccessful and in the relationships between a students and TheCollegeBoard.com Web site can only be unsuccessful if the student cannot turn on the computer. Therefore, in relation to cybernetworks, can there be unsuccessful relationships when it comes to static Web sites? In addition, the strength-of-position proposition also is problematic. It states that the students ability to access and use better social capital are tied to their better position of origin such as ascribed or attained position. However, the static Web sites does not know this information about the person looking at its information and so the

postulate in relation to static Web sites as cybernetworks does not work as well as all other social capital propositions which are based on the assumption that position of the individuals involved in the network has an impact on the access for embedded resources. Still, the results here indicate that the respondents are making decisions about the perceived person behind the information contained in these static sites as evidenced by the changing order of use and trust associated with the various Web sites and their respective "owners." Thus the terms, actual or perceived might best be incorporated into the postulates and propositions when referencing the position of the actors to allow for the explanation of cybernetworks.

Personal email, personal Facebook and personal IM/chat were used and rated higher compared to the other sources in this question. The rank order among them also supports our earlier findings where email was the most favored method of cyber- communication followed by personal IM/Chat and then personal Facebook.com/on-line social networking with the exception of the newly introduced static Web sites maintained by colleges and college search companies such as TheCollegeBoard.com. A greater percentage of the responding students ranked college Web site and company sponsored college search Web sites as very good – excellent than they did with personal email, personal Facebook.com, personal IM/Chat. This indicates a preference for this particular combination of formal networks and cyber- communication method. Therefore, with the introduction of these static sites a new understanding is added to the mix of networks and communication methods. Specifically, the college Web sites appear to take the top place in use and trust ahead of personal email among the cyber- methods of communication but still slightly behind the total percentage respondents that used in-person communication (93.4%) but more than phone (68.5%).[32] The preference for these Web sites that link students to a formal network, also provides another example of the weaker the tie the more likely the student will

[32] See Table 20.

have access to better social capital to gain new information. Since the act of searching and selecting a college is new to students, gaining access to this new information is a priority. Therefore using a weaker tie which bears greater embedded resources would be a positive outcome for the student.

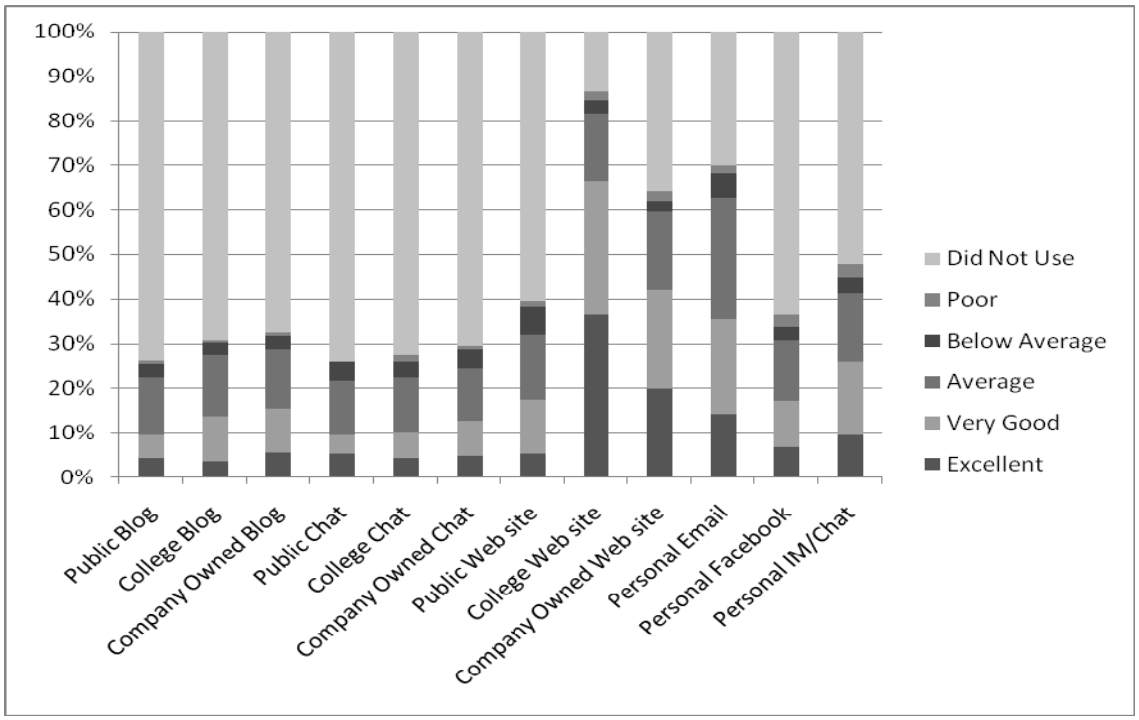


Figure 31. On-line survey question 38 responses.

Table 25 *On-line survey question 38 responses*

Various Cybernetworks	Excellent	Very Good	Average	Below Average	Poor	Did Not Use
Public Blog	10	13	30	7	2	176
College Blog	8	24	33	7	1	165
Company Owned Blog	13	23	32	7	2	161
Public Chat	12	10	29	10	0	176
College Chat	10	14	29	8	4	173
Company Owned Chat	11	19	28	10	2	168
Public Web site	12	29	35	15	3	144
College Web site	87	71	36	7	5	32
Company Owned Web site	47	53	42	5	6	85
Personal Email	33	51	65	13	4	72
Personal Facebook	16	24	33	7	7	151
Personal IM/Chat	22	39	37	8	8	124

4.4.3 Research question #1: Variations by place of origin

Having reviewed students use of formal and informal networks and traditional and cyber-communication methods as well as their intersection, the place of origin variable can now be better addressed.

First, I will examine their use of formal and informal networks in relation to the students' place of origin. To do this, cross-tabulations statistics were completed to determine any percentage differences in use of the formal and informal networks. A chi-squared was calculated to determine if any of the difference detected were due to chance or if any statistically significant regarding the relationship could be determined. In relation to the use and rating of mother when immigrant status is considered there are small variations between immigrants and non-immigrants and their reported use or rating of information from their mothers. In addition, the chi-square was equal to .169 (2-sided) and tells us that the variations observed in this analysis are due to chance and therefore speculation of the relationship is not possible. Similar conclusions were determined through the calculation of chi-squared for father (.562), sibling (.159), other relatives (.293), guidance counselors (.301), college admissions counselor (.532), professional in the field (.483), current college student (.519), high school teacher (.121), friends (.861), athletic coach (.633), religious person (.316), college faculty (.167) and others (.483) as show in Appendix M.

However a chi-squared less than .10 was calculated with independent college counselor (.022) and neighbors (.055) giving indication that these noted differences are not likely to be attributed to chance and therefore indicating an acceptable level of significance regarding the relationship between place of origin and independent college counselor as well as neighbors. The

analysis for the relationship between independent counselor and place of origin indicates a difference between the percentage of immigrants who indicated using such as professional for assisting them in their college search and selection (see below Table 26). Slightly more than 30% indicated that they used and independent college counselor compared to 16% of the native students. Also, immigrants users seem to rate the information they are receiving from those individual more highly than the native users. In fact, none of the immigrant students indicated that the information from their independent counselor was poor compared to 3.6% of the native students. It is interesting that the immigrant students show a higher use of these individuals as they typically charge for their services. In addition, the survey respondents were determined to be mostly middle to lower SES ranges therefore, it would not seem that either immigrants or natives would be better positioned financially to secure such a person or according to social capital theory, different in regards to this characteristic. However, the earlier literature review does indicate that on the whole, immigrants are more disadvantaged than native students in relation to a good deal of indicators. Therefore, with that assumption the results regarding the use of independent counselors can be understood by the strength of weak ties proposition as well as the strength of location. The strength of weak ties can be applied to both immigrants and natives as the independent college counselors are typically used by students only during their college search and selection process. Therefore by definition they are a weak tie and as such, provide better social capital due to the instrumental action of the survey respondents in this case. The difference is between the percentages of native versus immigrant respondents that used them. The finding that immigrants used them more than natives makes sense in relation to this theory as immigrants, being disadvantaged represents a “weaker” weak tie than native respondents and therefore the greater need for better social capital to gain new information. However, it

challenges the strength of position proposition that indicates that the better the position of origin (native versus immigrants) the more likely the actor will access (engage with independent college counselors) and use better social capital (structurally embedded resources in them). According to this proposition, the native students because they hold a less disadvantaged position should be more likely to use independent college counselors. However, our example proves the opposite. The difference is between the percentages of users. This is an example of one of the two assumption in Lin's theory of social networking stated earlier as "instrumental action" or the "heterophilious principle of interactions" (Lin, 2001a, p. 58). Here the network is between individuals of dissimilar social positions. The dissimilarity referring to their knowledge about the college search and selection process and since the immigrants are mostly from the middle to low SES level, it is highly likely they are in the same or lower SES as the independent counselor. Either way, the student is connecting with the independent counselor to benefit from the information that such a person typically possesses. It is interesting however, that the outcome of that connection appears to be different between the immigrants that used the independent counselor and the native students. The native students indicated less satisfaction with the information than the immigrant student. One possible explanation is that the initial knowledge of the native students about their college search and selection process was higher than the immigrant students and therefore the information that was provided by the independent counselor would provide a greater degree of assistance or capital to the immigrant student than to the non-immigrant therefore resulting in a higher rating among immigrants compared to natives. Since the native students have been determined to have a higher percentage of second college bound generation students it is highly likely to be the case. However, additional interviews of

such groups would need to be conducted to ascertain the specifics of the differences identified here and is beyond what the analysis of this on-line survey's responses might tell us.

The analysis of use of neighbors (see below Table 27) also indicates a significant difference beyond chance between immigrants and native respondents with respect to both their use and rating. The greatest difference detected was with overall use and ratings of those that were used. A smaller percentage of the native students used their neighbors in this process compared to the immigrant students (22.6 versus 31.5 respectively). However, of those who did use neighbors, a higher percentage of immigrant students (10.9%) rated the information they received from their neighbors below average to poor compared with native students (2.2%).

Table 26 *Cross-tabulation for independent college counselor rating and place of origin*

			Immigrant		Total
			Yes	No	
Independent College Counselor	Excellent	Count	4	5	9
		% within Immigrant Status	5.5%	3.6%	4.3%
	Very Good	Count	7	5	12
		% within Immigrant Status	9.6%	3.6%	5.7%
	Average	Count	8	6	14
		% within Immigrant Status	11.0%	4.4%	6.7%
	Below Average	Count	3	1	4
		% within Immigrant Status	4.1%	.7%	1.9%
	Poor	Count	0	5	5
		% within Immigrant Status	.0%	3.6%	2.4%
	Did Not Use	Count	51	115	166
		% within Immigrant Status	69.9%	83.9%	79.0%
Total		Count	73	137	210
		% within Immigrant Status	100.0%	100.0%	100.0%

Table 27 *Cross-tabulation for neighbors rating and place of origin*

			Immigrant		
			Yes	No	Total
Neighbors	Excellent	Count	2	9	11
		% within Immigrant Status	2.7%	6.6%	5.2%
	Very Good	Count	6	5	11
		% within Immigrant Status	8.2%	3.6%	5.2%
	Average	Count	7	14	21
		% within Immigrant Status	9.6%	10.2%	10.0%
	Below Average	Count	6	2	8
		% within Immigrant Status	8.2%	1.5%	3.8%
	Poor	Count	2	1	3
		% within Immigrant Status	2.7%	.7%	1.4%
	Did Not Use	Count	50	106	156
		% within Immigrant Status	68.5%	77.4%	74.3%
Total		Count	73	137	210
		% within Immigrant Status	100.0%	100.0%	100.0%

It is possible that these findings reflect the neighborhoods and therefore neighbors for immigrants versus native students. In other words, the findings about the use of neighbors by immigrant students reflect the homophilious interaction postulate. It is also an expressive action or one to maintain their resources and requires less effort. As such, it is possible that immigrants tend to live in immigrant neighborhoods with similar neighbors. Therefore accessing those networks would not provide additive information or better embedded resources and would explain the greater percentage of immigrants rating the information provided through these relationships as poor compared to native respondents explaining the results found here. In both instances of neighbors and independent counselors the number of respondents and therefore data in the respective cells in the rows and columns is fairly low. A larger representation of users for each might help improve the understanding of the relationship shown here.

Similar to the overall analysis, it is important for this study's focus to consider these findings in relation to possible differences and similarities in the method of communication between natives and immigrants as well. This will further the consideration of the strength of position proposition in relation to cybernetworking or communication method.

These possible difference and similarities are analyzed by computing cross-tabulations between uses of the various communication methods reviewed earlier but will now consider the respondents' place of origin. A chi-square was calculated to determine the significance of the relationship. Appendix N presents the findings.

Two forms of communication methods and their use show statistically significant differences between native and immigrant students. These are the use of email (X^2 = .082 [2-sided] & Fisher's Exact Test = .092) and in-person (X^2 = .002 [2-sided] & Fisher's Exact Test = .004). Slightly more than 65% of the immigrant respondents indicated use of email with their

college search and selection networks compared to 55.1% of the native students. In contrast, 87.8% of the immigrant respondents stated using in-person communication with these networks process compared to 96.8% of the native students. This finding is interesting as it provides an explanation for Lin's idea of ascribed characteristics and their role in social capital. Lin (2001a; 2001b) asserts that ascribed characteristics can engage the social status and norm influences between the individuals of the social networks and has an impact on the social capital or relationship. This in turn has implications for the embedded information that is a benefit of that relationship. This relates to the strength-of-position proposition. In other words, someone's perceived ethnicity or place of origin in today's anti-immigrant climate may result in a different and possibly less useful relationship between the immigrant and the other entity in that relationship than if their ascribed characteristics were not known to one another. The resulting usefulness or degree of access to the information embedded in this relationship is thus affected by such social status and norms. In relation to the current research finding that a greater percentage of immigrants use email than native students in their college search and selection process as well as its inverse relationship with in-person communication and student place of origin helps to supports Lin's notion that cybernetworks provide relationships which challenge our social capital basic considerations such as norms, social status and closure and how they function in our expanded view of information channels to better understand what constitutes social capital today. In relation to these findings, the immigrant and native respondents are investing in their college search and selection social relations in very different ways to capture the embedded resources in those relationships. Immigrant respondents appear to use a cybernetworking method that can be devoid of social status, norm and closure considerations typically present in traditional networks than do native respondents therefore improving the

student's potential access to the embedded information. Native students by percentage use, demonstrate their greater desire to use in-person or more traditional methods of communication to invest in their college search and selection networks which indicates a greater desire to possibly benefit from social status, norms and closure that more readily occur in these traditional methods of communication. However, it should also be noted that although immigrants reported using in-person (87.8%) to a greater degree than email (65.2%) compared with native students who reported 96.8% using in-person communication compared to 55.1% email with their networks, both groups were higher in their percentage use of in-person communication overall indicating that they both have preference for this method of communication and what it provides them by way of their social capital than email. Still, the noted difference gives support to the strength-of-position postulate and as Lin suspected the cybernetworks in this instance suggest a possible equalizing opportunity between native and immigrant respondents and their access to resources for the college search and selection process.

Another way to view the relationship between native and immigrant students and their use of the various traditional and cybernetworks is to compare their rank order according to percentage used (see below Table 28). The rank ordering reveals that the native and immigrant respondents have very similar preferences in relation to how they communicate with their networks about the college search and selection. The only variation in the list is the difference between email and instant messaging use for the two groups. What is interesting to note is the percentage use difference between the most used and the least used methods of communication by native students compared to immigrant students. In other words, there is an 86.1% difference between in-person communication compared to blog for native students compared to a 72.1% difference between in-person and blog for immigrant students. The use differences for these

communication methods were narrower among immigrants and wider among native students. Also, the overall average percentage use of these cyber- communication methods for immigrants was 53.8% compared to 52.2% for native respondents giving the immigrant again a slight overall communication advantage between the immigrant respondents and their networks within each individual traditional and cybernetwork. This analysis of the data also suggests the notion that immigrants are using the cyber- communication methods and their potential to equalize their opportunity for access to social capital in comparison to the native students. However, will the consideration of how the communication method intersects with the individual formal and informal networks further support these propositions or will it refute them and provide opportunity for a different understanding of these relationships in the cyber?

Table 28 *Rank order of cyber-communication methods for immigrant & native respondents*

	Immigrant	Rank	Native	Rank
In Person	87.8	1	96.8	1
Phone	68.7	2	68.4	2
Email	65.2	3	55.1	4
Instant Messaging	64.3	4	65.8	3
On-line Social Network	48.7	5	47.1	5
Mail	26.1	6	21.4	6
Blog	15.7	7	10.7	7

The responses to question #38 provide additional insight regarding the relationship between the student's place of origin and the use of cybernetworks. A cross-tabulation was completed of the responses for this question to determine statistical significance and, if so, what the relationship might add to the issues of position considered by social capital theory.[33] In

[33] A second cross-tabulation was completed on those who used the cybernetworks and their rating of that information. No single cybernetwork comparison with place of origin produced any statistically significant relationships.

relation to the most used cybernetworks listed previously in Table 25 (e.g., personal email, college owned Web site and college search company owned Web site and personal Facebook), with the exception of personal Facebook.com that was already considered and reviewed earlier in this analysis, no statistically significant results were found. Therefore, review of those statistics would not produce any helpful conclusions. The two cybernetworks which were not considered in my analysis earlier but also not statistically significant (Fisher Exact Test = .689 for college Web site and .780 for college search company owned Web site) are show in tables 29 and 30. I only show them as they are new to the analysis of cyber- communication methods. Their patterns of use are similar in percentage use between the native and the immigrant students which has been the trend for a majority of the other cyber- communication methods reviewed thus far.

Table 29 *Cross-tabulation for college Web site use and place of origin*

			Immigrant		
			Yes	No	Total
College Web site	Used	Count	76	130	206
		% within Immigrant Status	85.4%	87.2%	86.6%
	Did Not Use	Count	13	19	32
		% within Immigrant Status	14.6%	12.8%	13.4%
	Total	Count	89	149	238
		% within Immigrant Status	100.0%	100.0%	100.0%

Table 30 *Cross-tabulation for college search company owned Web site use and place of origin*

			Immigrant		
			Yes	No	Total
College Search Company Owed Web site	Used	Count	56	97	153
		% within Immigrant Status	62.9%	65.1%	64.3%
	Did Not Use	Count	33	52	85
		% within Immigrant Status	37.1%	34.9%	35.7%
	Total	Count	89	149	238
		% within Immigrant Status	100.0%	100.0%	100.0%

The statistically significant cybernetworks in question 38 are public blogs unrelated to college search (X^2 = .003 2-sided), college owned blogs (X^2 = .002 2-sided) college search company owned blogs (X^2 = .003 2-sided), public chat unrelated to college search (X^2 = .002 2-sided) , college owned chat (X^2 = .021 2-sided) , college search company owned chat (X^2 = .087 2-sided) , students personal IM/Chat (X^2 = .007 2-sided) and public Web site unrelated to college search (X^2 = .041 2-sided) .

Tables 31–33 show the cross-tabulation results for public blogs unrelated to the college search and selection process, college owned blogs and blogs owned by college search companies. In these cross-tabulations, immigrants use these various blogs more than native students in order to discuss and gain information about the college search and selection process. This is important as our previous analysis for the general cyber- method of blogging shows no significant difference between native and immigrant use. By breaking down three forms of ownership for blogs a possible difference is detected.

Table 31 *Cross-tabulation for public blog use and place of origin*

			Immigrant Status		
			Yes	No	Total
Public Blog	Used	Count	33	29	62
		% within Immigrant Status	37.1%	19.5%	26.1%
	Did Not Use	Count	56	120	176
		% within Immigrant Status	62.9%	80.5%	73.9%
	Tot	Count	89	149	238
		% within Immigrant Status	100.0%	100.0%	100.0%

Table 32 *Cross-tabulation for college blog use and place of origin*

			Immigrant Status		
			Yes	No	Total
College Blog	Used	Count	38	35	73
		% within Immigrant Status	42.7%	23.5%	30.7%
	Did Not Use	Count	51	114	165
		% within Immigrant Status	57.3%	76.5%	69.3%
	Total	Count	89	149	238
		% within Immigrant Status	100.0%	100.0%	100.0%

Table 33 *Cross-tabulation for college search company blog use and place of origin*

			Immigrant Status		
			Yes	No	Total
College Search Company Blog	Used	Count	39	38	77
		% within Immigrant Status	43.8%	25.5%	32.4%
	Did Not Use	Count	50	111	161
		% within Immigrant Status	56.2%	74.5%	67.6%
	Total	Count	89	149	238
		% within Immigrant Status	100.0%	100.0%	100.0%

Similar to the various blogs, Tables 34–36 show that a higher percentage of immigrants also used the various chats compared to the native respondents. It should also be noted that the

order of use for both the blogs and chats for native and immigrant students follow a very similar pattern. For example, public chats not related to the college search and selection process are the least used chats among both native and immigrant respondents. This was followed by college owned chats and finally college search company owned chats. This same order of preference for use is noted among the blogs presented earlier.

Table 34 *Cross-tabulation for public chat use and place of origin*

			Immigrant Status		
			Yes	No	Total
Public Chat	Used	Count	33	28	61
		% within Immigrant Status	37.1%	18.9%	25.7%
	Did Not Use	Count	56	120	176
		% within Immigrant Status	62.9%	81.1%	74.3%
	Total	Count	89	148	237
		% within Immigrant Status	100.0%	100.0%	100.0%

Table 35 *Cross-tabulation for college chat use and place of origin*

			Immigrant Status		
			Yes	No	Total
College Chat	Used	Count	32	33	65
		% within Immigrant Status	36.0%	22.1%	27.3%
	Did Not Use	Count	57	116	173
		% within Immigrant Status	64.0%	77.9%	72.7%
	Total	Count	89	149	238
		% within Immigrant Status	100.0%	100.0%	100.0%

Table 36 *Cross-tabulation for college search company owned chat use and place of origin*

			Immigrant Status		
			Yes	No	Total
College Search Company Owned Chat	Used	Count	32	38	70
		% within Immigrant Status	36.0%	25.5%	29.4%
	Did Not Use	Count	57	111	168
		% within Immigrant Status	64.0%	74.5%	70.6%
	Total	Count	89	149	238
		% within Immigrant Status	100.0%	100.0%	100.0%

Table 37 shows that 50.6% of the immigrants respondents used public Web sites not related to the college search process of the time compared to 32.9% of the native respondents.

Table 37 *Cross-tabulation for public Web site use and place of origin*

			Immigrant Status		
			Yes	No	Total
Public Web site	Used	Count	45	49	94
		% within Immigrant Status	50.6%	32.9%	39.5%
	Did Not Use	Count	44	100	144
		% within Immigrant Status	49.4%	67.1%	60.5%
	Total	Count	89	149	238
		% within Immigrant Status	100.0%	100.0%	100.0%

Finally, Table 38 indicates that instant messaging was used by 53% of the native students compared to 39% of the immigrant students. This was the only cybernetwork that demonstrated a difference of use between the two places of origin groups where the native students indicated a greater use than the immigrant students.

Table 38 *Cross-tabulation for student instant messaging (IM) use and place of origin*

			Immigrant Status		
			Yes	No	Total
Students Instant Messaging	Used	Count	35	79	114
		% within Immigrant Status	39.3%	53.0%	47.9%
	Did Not Use	Count	54	70	124
		% within Immigrant Status	60.7%	47.0%	52.1%
	Total	Count	89	149	238
		% within Immigrant Status	100.0%	100.0%	100.0%

In summary, the cross-tabulation for question 38 indicates that among the most used cyber- method of communication; email, was used more by native students than immigrant students. Although the data proved not to be statistically significant and therefore the difference due to chance in our sample, the actual numbers conform to the patterns of use between native and immigrant students analyzed earlier in this report. It is also important to mention that the cross-tabulation on ratings for each of these cybernetworks produced no statistically significant relationships according to place of origin as this further delineation of the data resulted in too few responses per data cell to adequately show these relationships with any degree of confidence. More importantly, the analysis of the three lesser used cybernetworks; blog, chat/IM and on-line social networking broken down by ownership compared to the question used in our earlier analysis, reveals that immigrants appear to be using these cyber- methods more frequently than their native counterparts.

Therefore, in relation to our first research questions it can be stated that the various forms of cyber- communication methods play an essential role in the college search and selection process. Although in many ways it is secondary to the traditional methods of communication, it has been shown to be essential particularly among the survey respondents and their peers (friends). Notably the highest adopted methods of cyber- communication are instant messaging

and email. The analysis has also shown that although not used exclusively with informal networks, overall the respondents clearly favor these communication methods with those networks therefore satisfying the strength-of-strong-ties proposition rather than weak-ties. However, the greatest relationship between a formal network and the use of cyber-communication by the respondents was with colleges and college search companies and their respective Web sites for the college search and selection embedded resources. This form of cyber- communication was determined to be the second highest used method among the respondents and their networks followed by in-person relationships.

It should also be noted that there was not an overall preference for the use of formal or informal networks among the respondents. However, of those respondents who used the various networks with the exception of friends, the formal networks information was viewed to be more helpful in the process than their informal networks.

In relation to place of origin differences between the survey respondents that were used in answering the remaining research questions, several differences were found. Immigrant students, although similar to native respondents and their percentage use of all the various informal and formal networks considered by this study, were statistically determined to use independent college counselors and neighbors more than native students. Also, among the native and immigrant users for independent college counselors and neighbors, immigrants rated their information better than natives. These two examples further support several social capital postulates. In relation to the traditional and cyber- methods of communication, immigrants were found to use email 10% more than native respondents as well as blogs, chat and Web sites either associated with the general public, college or college search company owned. Native respondents were found to use in-person communication more than natives. Therefore, the analysis indicates

that immigrants appear to have similar if not even more diverse social networks in light of the studies consideration of cybernetworks which supports the notion by Lin that the cybernetwork environment might provide for equalization of opportunity because of the restraints that it lacks compared with traditional networks. Especially since the differences in use and types of information (good versus bad) advantages for immigrants appear to occur in the cyber-environment. In many ways, the immigrant respondents seem to be exhibiting persistence in getting information from many sources especially maximizing the new cyber-sources better than their native peers. This type of social capital building or strength in relationship building is similar to that found in the research where immigrant students showed better persistence with educational attainment than native students and therefore improved their prospects for social mobility or more specifically referred to as the social-resources proposition of social capital theory (Coll et al., 2002; M. J. White & Glick, 2000). Therefore, these findings lead us to the second research question which is to determine if the social-resource proposition is satisfied as a result of the cybernetworks used by immigrants. In other words, are the similarities and difference found in relation to the networking of the native and immigrant respondents by SES resulting in patterns of attendance between two-year and four-year CUNY colleges similar or different when compared with one another or to national statistical place of origin enrollment trends?

4.4.4 Research question #2: Social outcomes of network use

Based on the results related to the first research question, further analysis was conducted comparing the place of origin to enrollment at two-year versus four-year colleges while controlling for place of origin and certain SES ranges[34] (middle, lower/middle and low income).

[34] SES has been chosen to control as it has been shown in the NCES data to be associated with attendance patterns in two-year versus four-year institutions. See page 17 of this report. In addition, the questionnaire surveyed all SES

This was done to determine if the increased use of cybernetworks among immigrant students in their college search and selection can be associated with attendance at two-year colleges versus four-year colleges by analyzing the difference and/or similarities to native students in the same SES groupings. Although CUNY colleges are the same in cost, because two-year colleges require only two-years of tuition to receive an associate's degree versus four-years at a senior CUNY college to receive a degree, cost in relation to the degree obtained may be an issue. Controlling for SES and reviewing those results with the context of SES and place of origin should produce a more accurate understanding between and within the various groups. In relation to social capital theory, the results should either support or refute the strength-of-position proposition that indicates the better the position of origin, the more likely the individual will access and use better social capital. In this situation, the position of origin is attained position for immigrants. Their ascribed position therefore supplemented by the use of cybernetworks giving them access to better social capital. Therefore, their improved social capital or resources accessed in those social networks then exert influence on the outcome (enrollment in certain types of colleges) of these instrumental actions (use of cybernetworks) otherwise known as the social-resource proposition in social capital theory.

A cross-tabulation for place of origin, SES and college enrollment found statistical significance for the middle class and lower class segments of this analysis. The lower/middle class segment was not calculated to be statistically significant. For the middle class SES range the X^2 was equal to .000 ($p < .001$) and a high Pearson R value of .555 indicating a strong relationship (see Table 39). For this SES range, immigrants enrolled more at the two-year colleges (53.8%) than the four year colleges (46.2%) and native students were the exact opposite

groups but the analysis will only be on the middle income to low income students since there were too few respondents for the upper middle and upper class SES ranges to make any statistically significant analysis.

enrolling 85.7% of these groups' respondents in four-year colleges compared to 22.2% at two-year CUNY colleges. Therefore, it does not appear that the greater percentage use of cybernetwork relationships by immigrants in the middle class determined from the analysis of the first research question appears to have made a difference in their social capital to alter their enrollment patterns either in relation to the historical immigrant enrollment trends or compared to native respondents in this study. However, the enrollment pattern for immigrant respondents in this SES range as skewed toward two-year college as much as natives are skewed toward four-year CUNY colleges. What is not possible to determine is whether these statistics would be different from immigrant enrollment patterns at CUNY. Since this data is not collected at CUNY, it isn't possible to determine here but further continued data collection on successive CUNY first year students would allow for comparative data to see if this enrollment patterns are shifting toward four-year compared to two-year or the reverse. If enrollment is shifting toward four year, then it could be said that cybernetworks are furnishing better college search and selection information for immigrants therefore contributing to the shift in their typical CUNY enrollment patterns. The pattern is comparable to national statistics. Erisman and Looney (2007) stated that immigrants were 14% more likely than the general undergraduate population to be enrolled in a two-year institutions and that 55% of all immigrant undergraduates were in these colleges. Table 39 shows that only 53.8% of my respondents in the middle class income range immigrants compared to the 55% of immigrants nationally enrolled in two-year institutions. Therefore, my sample of immigrants is choosing to enroll less frequently in the two-year college compared to the national statistic.

Table 39 *Cross-tabulation of middle SES/place of origin and college of attendance*

SES				College of Attendance: two-year college	College of Attendance: Various four-year colleges	Total
Middle class / $65,000 – $99,999	Immigrant Status	Yes	Count	7	6	13
			Expected Count	2.3	10.7	13.0
			% within Immigrant Status	53.8%	46.2%	100.0%
			% within New College of Attendance	77.8%	14.3%	25.5%
			% of Total	13.7%	11.8%	25.5%
		No	Count	2	36	38
			Expected Count	6.7	31.3	38.0
			% within Immigrant Status	5.3%	94.7%	100.0%
			% within New College of Attendance	22.2%	85.7%	74.5%
			% of Total	3.9%	70.6%	74.5%
		Total	Count	9	42	51
			Expected Count	9.0	42.0	51.0
			% within Immigrant Status	17.6%	82.4%	100.0%
			% within New College of Attendance	100.0%	100.0%	100.0%
			% of Total	17.6%	82.4%	100.0%

The lower/middle SES range relationship shown in Table 40 was not calculated to be statistically significant and therefore the resulting data for this group cannot be interpreted in relation to this research question. In other words, the chi-square was calculated to be .384 indicating that the results may be due to chance.

Table 40 *Cross-tabulation of lower/middle SES/place of origin and college of attendance*

SES				College of Attendance		
				two-year college	Various four-year colleges	Total
Lower/middle class / $35,000 – $64,999	Immigrant Status	Yes	Count	7	13	20
			Expected Count	6.0	14.0	20.0
			% within Immigrant Status	35.0%	65.0%	100.0%
			% within New College of Attendance	43.8%	35.1%	37.7%
			% of Total	13.2%	24.5%	37.7%
		No	Count	9	24	33
			Expected Count	10.0	23.0	33.0
			% within Immigrant Status	27.3%	72.7%	100.0%
			% within New College of Attendance	56.2%	64.9%	62.3%
			% of Total	17.0%	45.3%	62.3%
		Total	Count	16	37	53
			Expected Count	16.0	37.0	53.0
			% within Immigrant Status	30.2%	69.8%	100.0%
			% within New College of Attendance	100.0%	100.0%	100.0%
			% of Total	30.2%	69.8%	100.0%

Finally, the lower SES range show in Table 41 was calculated to be significant at the .05 level (X^2 = .081) with a weak and slightly negative Pearson R correlation measure as indicated by value of -.175 symmetric measures albeit significant. Therefore, although significant, the relationship is weak and therefore, other latent factors are possibly contributing to the relationship between the two measured variables. However, the analysis for the lower SES range immigrant students indicates different enrollment patterns compared to the middle income SES

range. In this SES range, more of the immigrant respondents (71.4%) enrolled at four-year CUNY colleges compared to 28.6% at two-year CUNY colleges. This was also different than the enrollment pattern of native students in this low SES range that enrolled 45.5% in two-year versus 54.5% in four-year CUNY colleges. Therefore, not only did immigrants show the opposite behavior from traditional immigrant college attendance patterns as represented in 2005 U.S. Census data but they had a better four-year enrollment pattern than the native survey respondents enrolling at CUNY (Erisman & Looney, 2007). This suggests that the increased percentage use of cybernetwork communication by the immigrants in this SES range and therefore access to their embedded resources contribute to a positive impact on their enrollment compared to national immigrant enrollment trends, immigrant enrollment trends for middle incomes SES respondents in this research as well as native CUNY respondents within the same SES range. In order to further support the connection between the use of cyber- methods of communication and lower SES immigrant students attending four-year CUNY colleges compared to two-year CUNY colleges, a similar cross-tabulations was completed with the inclusion of the two most used cyber- methods by the respondents; personal email and college Web sites. Unfortunately this analysis was not statistically significant indicating that observed relationships were due more to chance in relation to the respondents who used email[35] or college Web sites[36] in their search and selection process and their enrollment patterns in two-year versus four-year CUNY colleges. Therefore, it is not possible to indicate that the use of either specific cybernetwork correlates with enrollment at one or the other colleges.[37]

[35] X^2 = .584 (Asymp. Sig 2-sided) for immigrants and X^2 = .893 (Asymp. Sig. 2-sided) for natives.
[36] X^2 = .517 (Asymp. Sig 2-sided) for immigrants and X^2 = .924 (Asymp. Sig. 2-sided) for natives.
[37] See Appendix O for complete cross-tabulation and measure of significance.

Table 41 *Cross-tabulation of lower SES/place of origin and college of attendance*

				College of Attendance		
SES				two-year college	Various four-year colleges	Total
Lower class / $0 – $34,999	Immigrant Status	Yes	Count	16	40	56
			Expected Count	20.2	35.8	56.0
			% within Immigrant Status	28.6%	71.4%	100.0%
			% within New College of Attendance	44.4%	62.5%	56.0%
			% of Total	16.0%	40.0%	56.0%
		No	Count	20	24	44
			Expected Count	15.8	28.2	44.0
			% within Immigrant Status	45.5%	54.5%	100.0%
			% within New College of Attendance	55.6%	37.5%	44.0%
			% of Total	20.0%	24.0%	44.0%
		Total	Count	36	64	100
			Expected Count	36.0	64.0	100.0
			% within Immigrant Status	36.0%	64.0%	100.0%
			% within New College of Attendance	100.0%	100.0%	100.0%
			% of Total	36.0%	64.0%	100.0%

In conclusion, it has been established that social capital are the relationships that individuals have with other individuals in order to obtain access to their embedded resources (Lin, 2001a; Lin et al., 2001b). These resources can have both positive and negative effects on the individuals as a result. Thus, in consideration of the second research question and the data analysis for the on-line survey, immigrant respondents have maximized their relationships with formal and informal networks involved in the college search and selection process and more specifically through a higher percentage use of cyber- communication methods than native respondents. In addition, those increased relationships have given them access to resources

which should according to social capital's social-resource proposition, positively impact the outcome of that relationship. In other words, show some influence on the outcome of their instrumental action. A positive impact in one of the three SES ranges analyzed was determined as the enrollment trends were different from those traditional immigrant enrollment trends shown in the NCES data reviewed earlier that suggests immigrants are most likely to enroll in two-year and proprietary schools as well as in comparison to the native CUNY survey respondents who according to national trends enroll more frequently in four year schools compared to two-year schools. However, as the results among the three SES groups varied in results it is difficult to state with certainty that overall cybernetworks contributed to improved social capital for the immigrant respondents in such a way as statistically alter the enrollment patterns to four-year CUNY colleges' therefore greater opportunity for social mobility. For middle income immigrant respondents, the majority of the immigrant enrolled in a two-year CUNY college compared to a four-year CUNY college. However, the percentage difference between the two is not as great as might be expected. The lower income SES range was not statistically significant and therefore the results inconclusive. Finally, the lower SES range of student's analysis was significant where immigrant enrollment trends were significantly different than traditional immigrant enrollment trends as well as native respondents however; it was not statistically possible to associate the highest used cybernetworks with this group to strengthen the support for this relationship. These various outcomes for immigrant students across the various SES ranges does not allow for a more general statement or conclusion about immigrant respondents and the results of their use with cyber- communication during the college search and selection and its possibly influence on their enrollment decision. However, the lower SES range of respondents has produced results that do indicate a different enrollment trend among immigrant students who used a significantly

higher percentage of cybernetworks than the immigrant respondents and have a different enrollment pattern than the native respondents in this SES range as well as compared to traditional national enrollment trends for both SES and immigrants. Therefore, indicating a significant finding worthy of further research. A larger data set as well as one for another enrollment class would prove useful in strengthening the relationships that appears to be emerging here.

The final research question relates to the students perception of social mobility. In other words, do the immigrant respondents, who exhibit a higher percentage use of cyber-communication with their formal and informal college search and selection networks than native respondents think that higher education will bring them more social mobility compared to native students. This concept is evaluated in the survey through the respondents' level of agreement that obtaining a degree with improve their SES.

In order to test the relationship between respondents' use of the cybernetworks and their perspective of social mobility, I compared the respondents' use of the various cybernetworks with their responses to the on-line survey questions 50 and 51. Question 50 displayed the various SES labels and corresponding income ranges. Students were asked to select the one that best represented the salary and/or SES they expected to achieve as a result of completing their college education. Question 51 asked students if they agreed with the following statement: "I expect the academic degree that I will get to enable me to improve my current socioeconomic status." (For example: you will move from middle class to upper class status) I also examined the differences and similarities between native and immigrant respondents.

The analysis of the responses from question 51 found many of the cybernetwork communication methods tested to not be statistically significant according to their chi-squared

calculation. Those cybernetworks for which the relationship is unclear as a result were public blog, college blog (immigrants only), college search company blog, public chat (immigrants only), college owned chat, college search company owned chat, personal email, personal Facebook.com, college owned Web site, public Web site, personal IM. However some did show a significant relationship. They were college owned blogs and public chat for native respondents and college-search-company owned Web sites for both native and immigrant respondents.

College owned blogs were determined to be statistically significant as show in Table 42. The chi-squared was .084 (Asymp. Sig. 2 sided) therefore indicating a true relationship between native respondents use of college owned blogs and their agreement with the statement that their obtained college degree would improve their current SES. Upon reviewing the data in Table 42 it can be stated that a greater percentage of those native respondents that used the college owned blog indicated that they agreed that their degree was going to improve their current SES compared to those native respondents that did not use the college owned blog. Native blog users who believed their degree would improve their SES represented 93.9% of the whole group of native bloggers compared to 81.5% of the native respondents that did not use college blogs but also believed that their degree would improve their current SES. Therefore, those that use a college owned blog appear to agree more often with the idea that their degree will improve their SES than those that do not use the college owned blog among native respondents.

Table 42 *Cross-tabulation for place of origin, college owned blog use and agreement with improved SES from obtained degree*

Immigrant Status				Expectation that degree will improve SES		
				Student expect degree to improve their current SES	Student does not expect their degree to improve their current SES	Total
No	College Blog	Used	Count	31	2	33
			Expected Count	27.9	5.1	33.0
			% within College Blog	93.9%	6.1%	100.0%
			% within Expectation that degree will improve SES	26.1%	9.1%	23.4%
			% of Total	22.0%	1.4%	23.4%
		Did Not Use	Count	88	20	108
			Expected Count	91.1	16.9	108.0
			% within College Blog	81.5%	18.5%	100.0%
			% within Expectation that degree will improve SES	73.9%	90.9%	76.6%
			% of Total	62.4%	14.2%	76.6%
		Total	Count	119	22	141
			Expected Count	119.0	22.0	141.0
			% within College Blog	84.4%	15.6%	100.0%
			% within Expectation that degree will improve SES	100.0%	100.0%	100.0%
			% of Total	84.4%	15.6%	100.0%

The use of the public chat was another cybernetwork method that showed a relationship with the perception of social mobility, but again only in the case of native respondents (see Table 43). The chi-squared measure was .056 (Asymp. Sig. 2 sided) that indicates a significant relationship between the native respondents use of public chat in relation to their agreement with the statement that their degree would improve their SES. In this relationship 96.3% of the native respondents that used public chat for their college search and selection process also indicated that they believe their college degree would enable them to improve their SES compared to 81.4% of

those native respondents that did not use public chat in their college search and selection process, but also believed their college degree would lead to social mobility. Therefore, those native respondents that used public chat are likely to agree with the idea that their college degree would improve their current SES.

Table 43 *Cross-tabulation for place of origin, public chat use and agreement with improved SES from degree obtained*

				Expectation that degree will improve SES		
Immigrant Status				Student expect degree to improve their current SES	Student does not expect their degree to improve their current SES	Total
No	Public Chat	Used	Count	26	1	27
			Expected Count	22.8	4.2	27.0
			% within Public Chat	96.3%	3.7%	100.0%
			% within Expectation that degree will improve SES	22.0%	4.5%	19.3%
			% of Total	18.6%	.7%	19.3%
		Did Not Use	Count	92	21	113
			Expected Count	95.2	17.8	113.0
			% within Public Chat	81.4%	18.6%	100.0%
			% within Expectation that degree will improve SES	78.0%	95.5%	80.7%
			% of Total	65.7%	15.0%	80.7%
		Total	Count	118	22	140
			Expected Count	118.0	22.0	140.0
			% within Public Chat	84.3%	15.7%	100.0%
			% within Expectation that degree will improve SES	100.0%	100.0%	100.0%
			% of Total	84.3%	15.7%	100.0%

Finally, there was a relationship between the use of company owned college Web sites by both natives and immigrants and the perception of social mobility (see below Table 44). This was particularly interesting since as determined earlier in this dissertation the use of Web sites

and more specifically college owned Web site was frequently used by both immigrant and native students in their college search and selection process. The significance in the relationship for both immigrants and natives importantly allows us to see potential difference and similarities. The chi-squared measure for immigrant respondents was .017 (Asymp. Sig. 2-sided) and for native respondents it was .038 (Asymp. Sig. 2-sided). Although both results indicate statistical significance, the relationship was only moderate (.291) and weak (. 172) Pearson R value for immigrant and native respectively. For immigrant respondents, 100% of those that indicated that they used college search company owned Web sites compared to only 87.1% of those who did not agreed with the notion that their degree would improve their current SES. For the native respondents, 89% of the college search company owned Web site users indicated they agreed that their degree would improve their current SES compared to 76% of the native respondents who were not users. For both users and non-users of this particular cybernetwork the immigrant population by percentage was higher than the native respondents in relation to their agreement with the notion that their obtained degree would improve their SES. These results can also be understood in relation to several of the social capital postulates. First, it supports the strength-of-weak-ties proposition which states that the weaker-the-tie, the more likely the respondent would have access to better social capital to gain new information. For both immigrants and native respondents the use of the college-search-company-owned Web site satisfies what by definition is a weak tie. In the cyber-environment this Web site provides better access to better social capital to gain additional resources for their college search and selection process. Therefore, according to the social-resources proposition, the better social capital resulting from their access to this cybernetwork (college-search-company-owned Web site) should influence their college choice. In both instances (use of Web site and college-search-company-owned Web sites), it

appears that there is a positive relationship between the information students obtain from Web sites and their understanding that the obtained degree will result in their improved SES. However, there appears to be a difference in that relationship for immigrants and native respondents as evidenced by the low percentage of natives that used the Web site and agreed with improved SES due to their obtained degree. In addition, the correlation statistic indicates a weaker relationship than that for immigrant students. Still, because the relationship is moderate or weak depending on place of origin of the respondents as well as the low number of overall respondents that could be analyzed for this relationship, it is difficult to be certain about the observed outcomes. As with the earlier results, additional data collection should help to strengthen or refute this finding and would prove important for the future understanding of cybernetworks in relation to social capital and traditional networks.

Table 44 *Cross-tabulation for place of origin, college search company owned Web site use and agreement with improved SES from degree obtained*

Immigrant Status				Expectation that degree will improve SES		
				Student expect degree to improve their current SES	Student does not expect their degree to improve their current SES	Total
Yes	College Search Company Owed Web site	Used	Count	52	0	52
			Expected Count	49.5	2.5	52.0
			% within College Search Company Owed Web site	100.0%	.0%	100.0%
			% within Expectation that degree will improve SES	65.8%	.0%	62.7%
			% of Total	62.7%	.0%	62.7%
		Did Not Use	Count	27	4	31
			Expected Count	29.5	1.5	31.0
			% within College Search Company Owed Web site	87.1%	12.9%	100.0%
			% within Expectation that degree will improve SES	34.2%	100.0%	37.3%
			% of Total	32.5%	4.8%	37.3%
		Total	Count	79	4	83
			Expected Count	79.0	4.0	83.0
			% within College Search Company Owed Web site	95.2%	4.8%	100.0%
			% within Expectation that degree will improve SES	100.0%	100.0%	100.0%
			% of Total	95.2%	4.8%	100.0%

Table 44 *(continued)*

Immigrant Status				Expectation that degree will improve SES		
				Student expect degree to improve their current SES	Student does not expect their degree to improve their current SES	Total
No	College Search Company Owed Web site	Used	Count	81	10	91
			Expected Count	76.8	14.2	91.0
			% within College Search Company Owed Web site	89.0%	11.0%	100.0%
			% within Expectation that degree will improve SES	68.1%	45.5%	64.5%
			% of Total	57.4%	7.1%	64.5%
		Did Not Use	Count	38	12	50
			Expected Count	42.2	7.8	50.0
			% within College Search Company Owed Web site	76.0%	24.0%	100.0%
			% within Expectation that degree will improve SES	31.9%	54.5%	35.5%
			% of Total	27.0%	8.5%	35.5%
		Total	Count	119	22	141
			Expected Count	119.0	22.0	141.0
			% within College Search Company Owed Web site	84.4%	15.6%	100.0%
			% within Expectation that degree will improve SES	100.0%	100.0%	100.0%
			% of Total	84.4%	15.6%	100.0%

The survey also asked another question regarding the perception of SES by gaining a higher degree (question 50). The CUNY respondents were asked to indicate the SES they hoped to achieve as a result of their degree therefore assessing a similar notion as in the last question

discussed above where the respondents were asked for their level of agreement in the relationship between a higher degree and higher social. I cross tabulated this question on what SES they hoped to achieve in relation to place of birth, use of cyber cyber-social networks and current SES. Current SES was used in order to see if the students were projecting upward, downward or no social mobility. All combinations with the exception of personal email were determined not to be significant and therefore the relationship between the various combinations with other cybernetwork methods could not be determined.[38] However, the use of personal email by lower middle class native and immigrant respondents regarding their college search and selection compared with their responses for projected SES achievement with degree completion proved to be statistically significant. Statistical significance was determined by the chi-square .029 (Asymp. Sig. 2-sided) for the immigrant and .015 (Asymp. Sig 2-sided) for the native respondents. In consideration of the data contained in the rows and columns of Table 45, 66.7% of the immigrants that used personal email with their networks about the college search and selection process and were in the lower/middle SES range indicated that their college degree would allow them to achieve upward social mobility. The percentage was determined by adding all cell percentages across the rows that were above lower/middle SES or the current respondent's SES level. For the lower/middle SES immigrants' respondents who did not use email, 33.3%, or half the percentage of users, indicated that their degree completion would lead to upward social mobility for them. Therefore, for lower/middle SES immigrants, email users tend to have a better outlook on their improved SES than those immigrants that do not use email. Email in this situation represents a strength-of-strong-tie as it was determined earlier that this

[38] A good deal of the analysis was not significant due to the low N of the respondents. It should also be noted that the some of the cells for the analysis which was determined to be significant were also small or empty therefore without additional data to confirm the outcomes for this section of the study, the results should be viewed with caution.

was a cybernetwork that was mainly used with informal networks and more specifically with friends. Therefore, this appears to support the maintenance or expressive action of these immigrant students and that the resources in these strong informal network relationships conducted through the email cybernetwork are influencing their perception of the degree they will obtain will result in an improved SES especially since those that did not use email for this process resulted in a much lower percentage of those respondents agreeing with the improved SES notion.

In relation to the native lower/middle class students, only 46.2% of them that used email with their networks for the college search and selection process indicated that they would obtain upward social mobility by their degree completion. For the lower/middle SES native respondents that did not use email for this matter, 70% indicated that they would improve their SES due to degree completion. Therefore, a negative relationship exists with lower/middle SES native respondents who used personal email with networks for college search and selection in relation to their belief that their degree will enable them to achieve upward social mobility. Natives that used email also were determined to do so with their informal networks and mainly with friends (strength-of-strong-ties). The results indicate that the use of email with mainly informal networks by lower/middle native respondents during their college search and selection process has a negative relationship on their view of their degree's ability to improve their SES status.

Therefore lower/middle immigrants that use email in this way are more associated with a greater percentage of respondents who see upward social mobility as a result of their degree than those immigrants who did not use email. For lower/middle SES native students, the relationship between having used email with networks about college search and selection indicates that email users, by percentage are less likely to see themselves achieving upward mobility compared to

those that do use it suggesting a negative relationship between use and potential for upward social mobility. Although these results do not suggest a causal relationship it does show the connection between one particular cybernetwork (email) which was widely and extensively used by all survey respondents but 10% more by immigrants in their college search and selection process and how those users compared to non-users, within and between place of origin, view their sense of upward social mobility which is directly attributable to the social capital contained within themselves.

Table 45 *Cross-tabulation for lower/middle class SES, place of origin and personal email with SES achievement due to degree obtained*

					SES Student hopes to achieve from degree						
SES	Immigrant Status				Upper class / $350,000 and above	Upper/middle class / $100,000 – $349,999	Middle class / $65,000 – $99,999	Lower/middle class / $35,000 – $64,999	Lower class / $0 – $34,999	Not sure	Total
Lower/middle class / $35,000 – $64,999	Yes	Students Email	Used	Count	0	5	3	3		1	12
				% within Students Email	.0%	41.7%	25.0%	25.0%		8.3%	100.0%
				% within SES Student hopes to achieve from degree	.0%	100.0%	100.0%	100.0%		33.3%	80.0%
				% of Total	.0%	33.3%	20.0%	20.0%		6.7%	80.0%
			Did Not Use	Count	1	0	0	0		2	3
				% within Students Email	33.3%	.0%	.0%	.0%		66.7%	100.0%
				% within SES Student hopes to achieve from degree	100.0%	.0%	.0%	.0%		66.7%	20.0%
				% of Total	6.7%	.0%	.0%	.0%		13.3%	20.0%
			Total	Count	1	5	3	3		3	15
				% within Students Email	6.7%	33.3%	20.0%	20.0%		20.0%	100.0%
				% within SES Student hopes to achieve from degree	100.0%	100.0%	100.0%	100.0%		100.0%	100.0%
				% of Total	6.7%	33.3%	20.0%	20.0%		20.0%	100.0%

Table 45 *(continued)*

SES	Immigrant Status				SES Student hopes to achieve from degree: Upper class / $350,000 and above	Upper/middle class / $100,000 – $349,999	Middle class / $65,000 – $99,999	Lower/middle class / $35,000 – $64,999	Lower class / $0 – $34,999	Not sure	Total
Lower/middle class / $35,000 – $64,999	No	Students Email	Used	Count	2	4	6	13	0	1	26
				% within Students Email	7.7%	15.4%	23.1%	50.0%	.0%	3.8%	100.0%
				% within SES Student hopes to achieve from degree	100.0%	44.4%	75.0%	100.0%	.0%	33.3%	72.2%
				% of Total	5.6%	11.1%	16.7%	36.1%	.0%	2.8%	72.2%
			Did Not Use	Count	0	5	2	0	1	2	10
				% within Students Email	.0%	50.0%	20.0%	.0%	10.0%	20.0%	100.0%
				% within SES Student hopes to achieve from degree	.0%	55.6%	25.0%	.0%	100.0%	66.7%	27.8%
				% of Total	.0%	13.9%	5.6%	.0%	2.8%	5.6%	27.8%
			Total	Count	2	9	8	13	1	3	36
				% within Students Email	5.6%	25.0%	22.2%	36.1%	2.8%	8.3%	100.0%
				% within SES Student hopes to achieve from degree	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
				% of Total	5.6%	25.0%	22.2%	36.1%	2.8%	8.3%	100.0%

In relation to these findings, earlier analysis showed that email was greatly used by all respondents but more frequently by immigrants (see below Table 46). From the overall respondents, it has been determined that a greater percentage of the lower/middle SES that use email more likely see themselves obtaining upward social mobility because of their degree. Looking at the cross analysis for the same lower/middle SES respondents, it can be determined that the 61.5% of the immigrants that used email tend to enroll in four-year CUNY colleges as do native respondents (72.7%). However, it is interesting that natives who come from such a low SES range and enroll at a four-year college which tends to produce better success rate among students in obtaining a four-year degree than two-year colleges and used email for their college search and selection process, would for the most part disagree that their college degree would allow them to obtain upward social mobility, and that those members of the same group (lower/middle SES, native, predominately four-year CUNY college enrollees) that did not use email in their college search and selection would be more likely to agree that their completed degree would better enable them to obtain upward social mobility. Finally, the same analysis for immigrants reveals the diametric opposite.

Table 46 *Cross-tabulation for student email and college of attendance with lower/middle SES and place of origin*

Immigrant Status	SES				College of Attendance: two-year college	College of Attendance: Various four-year colleges	College of Attendance: Total
Yes	Lower/middle class / $35,000 – $64,999	Students Email	Used	Count	5	8	13
				% within New College of Attendance	100.0%	72.7%	81.2%
				% of Total	31.2%	50.0%	81.2%
			Did Not Use	Count	0	3	3
				% within New College of Attendance	.0%	27.3%	18.8%
				% of Total	.0%	18.8%	18.8%
			Total	Count	5	11	16
				% within New College of Attendance	100.0%	100.0%	100.0%
				% of Total	31.2%	68.8%	100.0%
No	Lower/middle class / $35,000 – $64,999	Students Email	Used	Count	6	16	22
				% within New College of Attendance	66.7%	69.6%	68.8%
				% of Total	18.8%	50.0%	68.8%
			Did Not Use	Count	3	7	10
				% within New College of Attendance	33.3%	30.4%	31.2%
				% of Total	9.4%	21.9%	31.2%
			Total	Count	9	23	32
				% within New College of Attendance	100.0%	100.0%	100.0%
				% of Total	28.1%	71.9%	100.0%

Therefore, the use of email in the college search and selection process is more frequently associated with improved perceptions of SES upward mobility for immigrants than for natives in

the lower/middle SES range of our on-line survey respondents. This conclusion helps to show in a very small way a relationship where a particular cybernetwork whose engagement during the college search and selection process was different for immigrant and native respondents (immigrants who by percentage used it more than natives) and in turn was associated with somewhat similar enrollment patterns by place of origin (greater enrollment in four-year CUNY for both immigrants and natives) can be tied to very different views by that same group regarding their SES upward mobility which, as Lin might suggest could be understood by the information obtained from those email relationships. The findings also support Lin's assertion that social capital is constituted by the relationship itself and not whether the embedded resource works or not for them, since, in this instance, the embedded resource for native students does not work in relation to improving their sense of obtaining upward social mobility. For Lin, social capital still exists as there is still a relationship albeit a negatively resulting one. In addition, it supports Lin's notion that these embedded resources can have negative and positive outcomes. Certainly, relationships are occurring and therefore the information obtained exerting influence but in very different ways along the lines of place of origin. It should be noted that although this relationship did prove to be statistically significant, both populations (native and immigrants) were less than a total of 50 respondents each and therefore the resulting statistical analysis affected by that low N as a result any interpretation should be read with caution. Also, no other relationship considered for this analysis proved to be significant due to such a low *n* in relation to the type of separation that was preformed among the respondents. Additional data would need to be obtained to achieve stronger statistical analysis and provide a clearer understanding as to the meaning of these statistically significant results as well as potentially providing more statistically significant relationships among the variables considered.

4.5 SUMMARY

In sum, the analysis of the data from the on-line survey instrument does indicate an array of differences and similarities between the formal and informal networks with which students engage during this process as well as information about the communication methods through which they are doing it. More specifically, these differences and similarities are detected between traditional and cybernetworking activity confirming that the nature of the traditional versus the cybernetworking environment is somehow different as Lin suggests as well as similar in the ways of strong and weak ties. In addition, the formal or informal network with which the student is engaged in some instances also dictates which method of communication is used as well. Thus, this study's findings support Lin's assertion that our view of today's social networking activity and therefore social capital theory is not complete without the consideration of cybernetworking in our analysis. In addition, that Coleman's speculation that social networking activity is declining with all the negative implications attached to that assertion is not true. Rather, it is more that our social networking activity is changing similar to networking activity shifts that occurred when the U.S. postal system was expanded or when the phone was created. Therefore, our social networking historically has been tied to the changing communication environment in which we operate as a society. Thus, if we do not consider the Internet and its new ways that it provides us to communicate with our networks then we are possibly missing and not measuring accurately important methods of networking that are in operation. In relation to this study, without the consideration of cybernetworks as suggested by Lin (2001b), the volume of networking that is happening in the college search and selection process especially that between students and their peers would not be completely known and

with that, the ability to understand with whom they were speaking and about what types of information are greatly misunderstood. It would also hinder attempts to improve information about the college search and selection process among immigrants because if the important role that have in providing new information to these students.

The results also provide some indications that these cybernetworks do exhibit relationships between immigrant and native respondents and where they decide to enroll. This has implications for their social mobility as evidenced by four year versus two-year college enrollment and the use of college search Web sites. As such, it confirms the strength-of-weak ties proposition in relation to cybernetworks as discussed in the literature review. In addition, the use of email as a cybernetwork with informal networks is also positively associated with perspectives of social mobility for immigrants and negatively associated with native students allow us to situate this particular cybernetwork as satisfying the social-resource proposition for social capital, Lin's position that embedded resources can be both positive and negative as well as providing an example of the-strength-of-strong-ties proposition among cybernetworks. In conclusion, these findings begin to satisfy some of the propositions for social capital and to understand how groups (native and immigrants) are engaged with cybernetworks as a form of social capital as well as how they present a very different environment. That environment does provide equalizing opportunity if not the reverse as evidenced by the effect of email on native student's perception of their social mobility.

5.0 CHAPTER

OPPORTUNITIES IN CYBERNETWORKS

I conclude this dissertation by reviewing the two purposes for this study and the relevant findings, a listing of the limitations for the study, and suggestions for further research.

My dissertation was completed for two purposes. The first purpose was to fill in some of the gaps in literature reviewed in this dissertation. In order to review the findings in relation to this first purpose, I will cover any new forms of formal or informal networks that were discovered in my research as well as those significant findings related to the known networks, and the salient findings on the use of cyber-and traditional methods of communication with formal and informal networks by native and immigrant students during their college search and selection process. The second purpose of this study was to examine whether social capital theory regarding traditional social networks also apply to cybernetworks by examining the college search and selection process for immigrant students.

My research investigated the various formal and informal networks that are used by college bound students. Although one of the intentions of my research was to find new formal or informal networks that student might be using, I did not discover any. The focus groups and the on-line survey produced results that revealed only previously researched networks. As far as their use of formal and informal networks is concerned, there appeared to be no clear indication of preference between formal and informal among my respondents. However, when asked to assess the usefulness of their information, the respondents indicated a preference for the formal such as guidance counselors, admission counselors, high school teachers and current college students compared with their informal networks such as mother, father, siblings, other relatives.

The only exception to this finding was the use of friends. Friends were the most important networks mentioned by all respondents. In addition, because of the high correlation measure among formal as well as informal networks, it is clear that these networks are used by students very independently of the other. The informal networks represent stronger ties therefore the relationships are used to support the resources or information that the students already have. The formal networks represent weaker ties employed by the student and are the new connections or new information. This may also be the reason for the preference of the formal networks among all students. Since the college search and selection process was new for some of the respondents or changed for those that were second generation college bound students, it is reasonable to think that the new information embedded in the formal networks would be viewed as more valuable to the respondents than the information from their informal networks.

Two of the formal and informal networks were found to be statistically significant in terms of differentiating immigrant and native students. These were neighbors and independent college counselors. Although these two networks represent two of the least used networks by students overall, the findings begin to show some interesting differences between native and immigrant students. The significance of this finding lies in the rating of the resources/information from these networks by the respondents. Immigrants who used these networks rated them higher than the native students who used the same networks. The finding is important to the theory of social capital theory as it confirms the strength-of-tie and strength-of-structure proposition. The strength-of-tie proposition is satisfied because compared to other informal networks (mother, father, sibling, relatives) neighbor is the weakest tie in the group. As such, according to the proposition, the neighbor relationship would have the most new information/benefit if used by the student. In addition, immigrants finding neighbor networks

more useful than the native student confirms the strength-of-position postulate, because native students have a better position of origin than immigrant students as measured by their role category. Natives have a higher status and would probably network less with neighbors about this decision than immigrant students. Instead, they would seek out better networks with better resources about the process. However, while the postulate's prediction is accurate as far as neighbors are concerned, it is challenged by my findings regarding the use of independent college counselors. Independent college counselors are considered professional college advisors. Thus, they would constitute a better form of social capital and yet my analysis finds that native students use them less frequently than immigrant students. In addition, of all students that do use them, immigrants find them more useful than the native students. Therefore, my finding regarding neighbors supports the postulate and my finding regarding independent college counselors does not.

A second finding supports those of Erisman and Looney's (2007) study of immigrant trends in the 2005 Census data. They found that immigrant students did use the Internet as a main source of their information for the college search and selection process however, the immigrant students also felt the best source of information was from visiting the college or university and speaking in-person with an admissions counselor (Erisman & Looney, 2007, p. 10). Similarly, my study finds that immigrants as well as native students prefer to communicate in-person with their contacts about this process. However, there are several statistically significant findings when place of origin is correlated with the various traditional and cybernetworking communication methods. The methods are email, blog, chat, static-Web site-use and in-person communication. In relation to these communication methods, immigrants reported 10% more use of e-mail compared to native students and 10% more native students

reported in-person communication than immigrants. In addition, I found that immigrants used blog, chat and viewing static Web sites more than native students. These distinct differences in communication preference show the potential for the Internet and cybernetworks to provide an equalizing effect for disadvantaged groups such as immigrants as Lin suspected. In other words, static Web sites, email, blog and chat provide better communication methods and therefore better information about the college search and selection process for immigrants than the information they obtain from traditional communication methods such as in-person. Overall immigrants indicate they use the web for their college search but prefer in-person communication (McDonough, 2006; Vargus, 2004). However, in-person communication can also be complicated, "For a [immigrant] person who is unfamiliar with the American system of higher education, … researching various colleges and identifying the appropriate office to visit can be a daunting prospect" (Erisman & Looney, 2007, p. 20). Therefore, if immigrants are overwhelmed or unsure of the office or the process, these cybernetworks that I find to be used more by my study's immigrant respondents, are "safer" and allow them to get their information without knowing where to go physically to get their questions answered. In addition, they can ask their questions without anyone knowing what ethnicity the students belong to or providing any other visual clue that might solicit other societal prejudices. In fact, static Web sites as the electronic version of paper information allow for the best access as they provide the information on the web freely for anyone to use it. Unlike paper material which must be sent or the owner of those paper sources chooses who gets the information, web information is always present and available for anyone who looks it up at any moment. Considering the postulates and propositions for social capital, it appears that the cybernetworks challenge the structural postulate rather than the strength-of-position or strength-of-tie postulate. The structural postulate assumes that the

positions, authority, rules and individuals involved in the relationship form a pyramidal hierarchy. Except in some instances, the Internet helps to level out of this hierarchy. These exceptions appear to be most frequently associated with such Web 1.0[39] Internet applications as The College Board or The CUNY Web site rather than such Web 2.0 applications as Facebook.com that appear to resemble traditional social networking configurations albeit virtually. The difference between the Web 1.0 and Web 2.0 characteristics also explains the greater use of static Web sites and e-mail by immigrants compared to on-line social networking sites such as Facebook.com. In conclusion, it is reasonable to assume that other possible reasons exist for my respondents to have used cybernetworks in their college search and selection process. However, the fact that these immigrant respondents in the city of New York, who chose CUNY as their college from fairly similar SES ranges, with similar financial aid concerns, were found to have statistically significant different use of these networks than native students provides very strong evidence that their use of the cybernetworks has strong implications for the information they received about their college search and selection. This strong correlation therefore should have an impact on where they enroll at CUNY which is the subject of the next important finding in my study.

Erisman and Looney (2007, p. 20) found that U.S. immigrants nationally enroll 14% more frequently in two-year institutions than native students. Fifty-five percent of all undergraduate immigrants were enrolled in these institutions according to the 2005 U.S. Census data. My dissertation found a similar two-year college attendance rate (53.8%) for the immigrant

[39] Web 1.0 is about lectures, web 2.0 is about conversations, therefore web 1.0 represents the static Web sites and web 2.0 is about more interactive web applications such as Facebook.com. Web 1.0 trends included worries over privacy concerns resulting in a one-way flow of information, through Web sites which contained 'read-only' material. With, Web 2.0, the use of the Web can be characterized as the decentralization of Web site content, which is generated from the 'bottom-up', with many users being contributors and producers of information, as well as consumers (Flew, 2005).

CUNY respondents in the middle income however, only 28.6% of the lower SES CUNY immigrant respondents enrolled at two-year CUNY colleges compared to 71.4% at four-year CUNY colleges. This is important as research has shown that lower SES immigrants have less knowledge about the college admissions processes and financing options that results in higher two-year college enrollment compared to four-year colleges (Erisman & Looney, 2007). The results of this study indicate a very opposite enrollment trend for the lower SES CUNY survey respondents in relation to both middle income SES CUNY respondents and U.S. immigrants. In addition, I have found among these same immigrant respondents a greater variety of cyber-communication methods used as well as indications that immigrant respondents have received better information through these cybernetworks during their college search and selection compared to the CUNY native respondents. These more pronounced differences in attendance patterns allow us to speculate that the information these immigrant students have received during this process has somehow altered their two-year and four-year college attendance patterns. According to social capital theory, this better information via the Internet should have a positive effect on their action. The action in this event is the type of college chosen by the student. Therefore, these results further support the notion that cybernetworks can equalize opportunity. What is still not completely clear is the difference in impact of cybernetworks on the middle SES students compared to the lower SES ones. One possibility can be explained using the social capital postulates and propositions. Considering the strength-of-position proposition lower SES students are less likely to access and use better social capital or embedded resources than those in the middle income range. However, in the cyber-environment where this opportunity to access these resources is equalized this proposition is not supported. But, the relationship can be explained with the strength-of-weak-tie proposition. In this situation, the weaker the tie, the more

likely the individual will have access to better social capital for instrumental action because their strong ties may not be able to help them. In other words, it can be stated that because lower SES students have weaker ties based on their role category than middle income students they are more likely to get better resources and gain from the cybernetworks. This should result in a more improved college search and selection outcome for the lower SES students than it does for the middle income students. In other words, with better information, it is possible that the use of cybernetworks has a more positive effect on the lower SES students and improves their four-year college attendance pattern compared to the middle income students.

Finally, I will discuss the important finding about students perception of SES mobility in relation to their degree sought. Although no statistically significant findings were found for most cybernetworks analyzed, I was able to find one. The use of email for both immigrants and native students was found to be statistically significant in relation to their perceptions of degree completion and their upward social mobility. It was also determined in the research that email was used most with friends by both immigrants and native students. However, the use of email appears to have a negative connotation for native students since those who used email were less likely to indicate (46.2%) that obtaining their degree would improve their current SES than those who did not use email (70%). On the other hand, immigrants who used email (66.7%) showed a higher percentage agreement with the statement that degree completion would improve their SES than native email users (46.2%) as well as immigrant non-users (33.3%). Therefore, a positive association exists between immigrants' use of email — mainly with their friends — for the college search and selection process and the notion that their degree completion will lead to an improved SES. In addition, my research indicates that immigrants use email 10% more frequently than native students in the college search and selection process. Although the low

numbers of students represented in this statistic do not allow us to analyze this group further as it would not be statistically significant, there are possible research directions that could be pursued with a larger data set. For example, it is known that the respondents were mainly emailing with friends. In addition, immigrants were emailing more than native students. Therefore, it would be important to understand the other formal or informal networks these groups were emailing in addition to the specific information about which they were emailing. Those pieces of information might begin to give a rational for the negative or positive influence on the respective groups. Second, it was also shown that native students use in-person communication more than immigrants. Therefore, it is possible that this form of communication might produce more positive results when correlated with native students and their perspective of improved social mobility. This would indicate that it might have something to do with the method of communication that is perceived to be most useful by a particular group (native or immigrant) that has a positive correlation with their perceptions of mobility.

In sum, this dissertation provides several meaningful and important contributions to the two purposes set out at the beginning of the project. First, significant information regarding how immigrant and native students use their formal or informal networks during their college search and selection process was found. Second, the research findings provide more current data on traditional and cyber-communication methods that students use to engage with their formal and informal networks. Also, I have provided some evidence that cybernetworks in relation to the student's place of origin and SES have a correlation with enrollment patterns as well as perception of future SES. Each of these findings has implications for the current social capital and more importantly, how the inclusion of cybernetworks challenges the structural postulate of social capital because of the equalizing opportunities Lin theorized were present in the Internet.

Since the study shows that immigrant students among middle and lower SES ranges were attending four-year colleges at better than national and native CUNY student averages and were also found use static-Web sites more for information than native students, it suggests that these Web sites are filling the information void that Erisman and Looney identified as a contributing factor to lower educational attainment among immigrants. Therefore, the findings suggest that we should not abandon continued support and development of Web 1.0 Internet infrastructure for the newer Web 2.0 applications which appear to mirror more traditional social structures and eliminate the equalization opportunities. This does not mean to suggest that immigrants are not finding a way to address these traditional social structures in the Web 2.0 developments. For example, MigrantStudents.org is an organization that serves tens of thousands of existing migrant farm-worker families within the United States. One service is their College Assistance Migrant Program (CAMP) that provides among other things financial assistance for first-time college freshman. This group has created a Web 2.0 application [http://migrantstudents.ning.com] that bands together on the ning.com social networking site all alumni of CAMP as well as current students. Their initial intent was to use the technology to support employment of the group's recent graduates. They accomplish this by using the technology of Web 2.0 to join recent CAMP alumni with older graduates who might know about jobs at their place of employment or may be looking to hire employees for their own company. The groups has grown beyond this initial function to provide career advice, general chat among like individuals and other various forms of support. Therefore, there is a place and a purpose for Web 2.0 and how it supports disadvantaged groups as well. However, the findings of this report currently show Web 1.0 to be the important part of the Internet that proves to make a different for immigrant students. In addition, if the information that is contained in migrant.ning.org was

placed on a Web 1.0 static Web site for all students to access, it might have a more powerful impact on a greater number of students and further supports my assertion and push for maintenance and growth of information in the Web 1.0 environment.

5.1 LIMITATIONS

There are several identified limitations with this study. First, this study considers only informal and formal social networks identified in the historical review of literature, the analysis of chat rooms from one college from a specific geographical area of the United States and the focus groups of a small percentage of the total City University of New York (CUNY) first year student population. Therefore, the findings are most relevant for urban students situated in this geographical location who have chosen to attend CUNY.

The focus group did not have the desired number of participants but was greatly diversified according to semi-structured characteristics specified from the beginning of the study. As the focus groups were conducted to better understand the fundamental use of cybernetworks and traditional networks by the population of students to be studied through the on-line survey, the findings did prove to be sufficiently informative for this purpose. However, a larger number of respondents might have provided greater insight as statistical analysis could have been completed if the sample were larger. Still, meaningful information was found and discussed in the analysis section of this research. In addition, the number of respondents for the on-line survey proved to be insufficient for a number of the statistical analyses therefore limiting my ability to draw conclusions about relationships relevant to answer the research questions.

Since the study relied on CUNY first-year students for its focus group and on-line survey, there are inherent issues associated with types of students in this university system that limit the results' application either for practical purposes or for the larger student population in different geographical regions of the United States. For example, the immigrant students in this sample would have immigrated to the northeastern section of the United States and situated themselves

in an urban location. As had been noted in the immigration research review, my dissertation's finding would be limited to urban immigrants in this geographical area versus those who would have settled in a suburban west coast of the United States. These geographical differences might results in different outcomes due to differences in the receiving community as these differences have been shown to have some impact on immigrants networking abilities.

Because the on-line survey was constructed on the basis of information gleaned from reviews of chat sessions and the on-line focus groups, the types of individuals who are predisposed to these colleges or the use of cybernetworks already can present a limitation to the type of information that was observed and therefore incorporated into the construction of the on-line survey instrument are present. In addition, the chat transcripts were from one college that serves only females. As a result, the analysis of these transcripts would have contained a gender bias. However, as this was only one of the sources considered in the study to assist with the construction of the on-line survey instrument and the foundation of how students were incorporating cybernetworks with their formal and informal networks in the college search and selection process, the other areas of analysis such as historical literature review and on-line focus groups should have buffered any resulting gender bias from the chat room transcript analysis. Also, since the chat room transcripts were analyzed as qualitative data by the principle investigator for this study, the results are subject to some degree of research bias.

Because my dissertation data was collected through on-line focus groups and an on-line survey, many of the respondents may have been predisposed to going on-line for information and have been more familiar with the Internet and its uses compared to the overall CUNY population. This may also be a reason for the lack of any digital divide among the respondents.

Finally, as students were asked to reflect back on their college search and selection processes that occurred during the prior year, their responses may suffer the loss of some details due to this lapse in time. As one such student commented in Focus Group #2, “It is really difficult to think back to almost a year ago.” As noted in the literature review, students arrive at certain stages of the college selection/search process at different times and those times correspond to certain calendar months of the year. The on-line survey was administered to the first year students approximately 4–6 months from the date of their final decision about what college to attend. Therefore, the students’ perception about their use of cybernetworks and what they did at the moment they were using them may be affected by their recall ability. Optimally, the survey should be administered as close to the stage of the process in question as possible.

5.2 RESEARCH OPPORTUNITIES

As a result of this research, there are several possible studies that would be useful in further developing my findings as well as new directions on the topic of cybernetworks. These studies are the collection of additional data to strengthen the data I have already collected; breaking down the college search and selection stages to investigate differences and/or similarities to the use of traditional and cyber- communication methods with formal and informal networks during these specific stages; a more in-depth analysis of specific useful information exchanged between formal or informal networks and students in this process and investigating how Web 2.0 is effecting the equalization of opportunity that is evident in Web 1.0. These will be further explained in the following paragraphs.

Continued refinement of the survey instrument in this study and additional data collection would strengthen the analysis of this research. Currently the data set it too limiting and therefore,

reduces the significant findings which in turn keep me from drawing important conclusions. In addition, data collected over several years would also provide comparative data which would enable me to see changes among the variables as well as the native and immigrant groups. This would strengthen the reliability of the statistics as well. Finally, I found that the technological advances have made it difficult to test specific methods of communication. For example, the Internet is accessible on the phone. Therefore, asking students about their phone use versus their Internet use can be confusing for them and result in bad data. Future administration of the survey instrument in this study would benefit from refining these communication methods more specifically so that the resulting data accurately reflect where and how students are engaging with these cybernetworks.

Studies on the college choice model researched by McDonough (1997) and Roderick et al., (2008) studies have shown that students use different networks during the college search compared with the selection stages. As the results of my dissertation have found differences in the use of formal and informal networks as well as differences with some of the traditional and cyber- communication methods, it would be interesting to see if the same or different findings would be found with respect to these two stages. This would add to the current college search literature as well as give further findings for practical developments of cyber- communication methods that might be used with immigrant students to fill their information gaps more strategically at these two very different stages of the process.

Another possible direction for the research would be to further explore the types of information that is exchanged between the highly used formal and informal network through cyber- and traditional communication methods. This would allow for further exploration of the mobilized social capital model proposed by Lin where the embedded information being

exchanged between those in the relationship is investigated. Therefore, it looks to understand what specific pieces of information are useful between certain formal or informal networks and the students in the college search and selection process.

Finally, a third direction would consider the developments of Web 2.0 compared to Web 1.0 in relation to social capital theory. Although, in this study I considered both Web 1.0 (static Web sites) and Web 2.0 (Facebook.com) I did not focus on their structural differences within the Internet and resulting implications. My study looked only at cybernetworks that were mentioned by students to determine how they used them. My results have shown a difference in these different web environments but they could also benefit from further exploration. This research would be useful as my study showed that Web 1.0 (static Web sites) were used a great deal by immigrants and had implications for the type of college (two-year versus four-year) in which they enrolled. Therefore, Web 1.0 applications provide equalizing opportunity. In consideration of this finding, the postulate of structure for social capital theory should be reconsidered in relation to this level of Internet developments. On the other hand, Web 2.0 developments appear to be replicating the political economy present in society outside of the Internet. As Web 2.0 moves in the direction of replicating what we experience on a day-to-day basis, is it possible that the new direction of Web 2.0 and further web developments are eliminating the Web 1.0 equalization of opportunity effects? If so, how are groups such as immigrants engaging with these new developments to their advantage? An excellent example of this was the MigrantStudents.org groups' creation of the Web 2.0 Ning.com application. This group does maintain their Web 1.0 application at MigrantStudents.org as well as the new Web 2.0 application on Ning.org. It would be interesting to explore why they engaged in the Web 2.0 application and to understand what it provides for them and their members that is not available to

them through their Web 1.0 application. Other research by Alex Berger (2008) suggests that males and females differ in their use of the Web 2.0 applications. Jeffery Young (2008) has found trust issues associated with the ways that Web 2.0 is being used between students and their teachers. Therefore, understanding these developments and the changing actions of the individuals using them will continue to refine social capital theory's propositions and postulates.

APPENDIX A

THECOLLEGEBOARD.COM SCREEN SHOT FOR LIST OF SCHOOLS IN A 25 MILE RADIUS

Home > Find a College > College Search > QuickFinder

College MatchMaker: Results Print List

121 Matches Found

Selected criteria: NY , <20 miles from '10025'

Adelphi University
Garden City, New York

American Academy McAllister Institute of Funeral Service
New York, New York

American Academy of Dramatic Arts
New York, New York

Art Institute of New York City
New York, New York

ASA Institute of Business and Computer Technology
Brooklyn, New York

Barnard College
New York, New York

Beis Medrash Heichal Dovid
Far Rockaway, New York

Berkeley College
White Plains, New York

Berkeley College of New York City
New York, New York

Beth Hamedrash Shaarei Yosher Institute
Brooklyn, New York

Beth Hatalmud Rabbinical College
Brooklyn, New York

Boricua College
New York, New York

Bramson ORT College
Forest Hills, New York

Business Informatics Center
Valley Stream, New York

Central Yeshiva Tomchei Tmimim-Lubavitch
Brooklyn, New York

City University of New York: Baruch College
New York, New York

City University of New York: Borough of Manhattan Community College
New York, New York

City University of New York: Bronx Community College
Bronx, New York

City University of New York: Brooklyn College
Brooklyn, New York

City University of New York: City College
New York, New York

City University of New York: College of Staten Island
Staten Island, New York

City University of New York: CUNY Online
New York, New York

City University of New York: Hostos Community College
Bronx, New York

City University of New York: Hunter College
New York, New York

City University of New York: John Jay College of Criminal Justice
New York, New York

City University of New York: Kingsborough Community College
Brooklyn, New York

City University of New York: LaGuardia Community College
Long Island City, New York

City University of New York: Lehman

College
Bronx, New York

City University of New York: Medgar Evers College
Brooklyn, New York

City University of New York: New York City College of Technology
Brooklyn, New York

City University of New York: Queens College
Flushing, New York

City University of New York: Queensborough Community College
Bayside, New York

City University of New York: York College
Jamaica, New York

Cochran School of Nursing-St. John's Riverside Hospital
Yonkers, New York

College of Mount St. Vincent
Riverdale, New York

College of New Rochelle
New Rochelle, New York

College of Westchester
White Plains, New York

Columbia University
New York, New York

Columbia University: School of General Studies
New York, New York

Concordia College
Bronxville, New York

Cooper Union for the Advancement of Science and Art
New York, New York

Darkei Noam Rabbinical College
Brooklyn, New York

DeVry Institute of Technology: New York
Long Island City, New York

Dominican College of Blauvelt
Orangeburg, New York

Eugene Lang College The New School for Liberal Arts
New York, New York

Fashion Institute of Technology
New York, New York

Fordham University
Bronx, New York

Globe Institute of Technology
New York, New York

Helene Fuld College of Nursing
New York, New York

Hofstra University
Hempstead, New York

Institute of Design and Construction
Brooklyn, New York

Iona College
New Rochelle, New York

Jewish Theological Seminary of America
New York, New York

Juilliard School
New York, New York

Kehilath Yakov Rabbinical Seminary
Brooklyn, New York

King's College
New York, New York

Laboratory Institute of Merchandising
New York, New York

Long Island Business Institute: Flushing
Flushing, New York

Long Island College Hospital School of Nursing
Brooklyn, New York

Long Island University: Brooklyn Campus

Brooklyn, New York

Long Island University: C. W. Post Campus
Brookville, New York

Machzikei Hadath Rabbinical College
Brooklyn, New York

Manhattan College
Riverdale, New York

Manhattan School of Music
New York, New York

Mannes College The New School for Music
New York, New York

Marymount Manhattan College
New York, New York

Mercy College
Dobbs Ferry, New York

Mesivta Torah Vodaath Seminary
Brooklyn, New York

Metropolitan College of New York
New York, New York

Mirrer Yeshiva Central Institute
Brooklyn, New York

Molloy College
Rockville Centre, New York

Monroe College
Bronx, New York

Nassau Community College
Garden City, New York

New York Career Institute
New York, New York

New York Institute of Technology
Old Westbury, New York

New York School of Interior Design
New York, New York

New York University
New York, New York

Pace University
New York, New York

Parsons The New School for Design
New York, New York

Phillips Beth Israel School of Nursing
New York, New York

Plaza College
Jackson Heights, New York

Polytechnic Institute of New York University
Brooklyn, New York

Pratt Institute
Brooklyn, New York

Professional Business College
New York, New York

Rabbinical Academy Mesivta Rabbi Chaim Berlin
Brooklyn, New York

Rabbinical College Bobover Yeshiva B'nei Zion
Brooklyn, New York

Rabbinical College Ch'san Sofer of New York
Brooklyn, New York

Rabbinical College of Ohr Shimon Yisroel
Brooklyn, New York

Rabbinical Seminary Adas Yereim
Brooklyn, New York

Rabbinical Seminary of America
Flushing, New York

Sarah Lawrence College
Bronxville, New York

School of Visual Arts
New York, New York

Shor Yoshuv Rabbinical College
Lawrence, New York

St. Francis College

Brooklyn Heights, New York

St. John's University
Queens, New York

St. Joseph's College
Brooklyn, New York

St. Thomas Aquinas College
Sparkill, New York

St. Vincent Catholic Medical Centers
Fresh Meadows, New York

State University of New York College at Old Westbury
Old Westbury, New York

State University of New York Downstate Medical Center
Brooklyn, New York

State University of New York Maritime College
Throggs Neck, New York

Swedish Institute
New York, New York

Talmudical Seminary Oholei Torah
Brooklyn, New York

Technical Career Institutes
New York, New York

Torah Temimah Talmudical Seminary
Brooklyn, New York

Touro College
New York, New York

United States Merchant Marine Academy
Kings Point, New York

United Talmudical Seminary
Brooklyn, New York

Vaughn College of Aeronautics and Technology
Flushing, New York

Wagner College
Staten Island, New York

Webb Institute
Glen Cove, New York

Wood Tobe-Coburn School
New York, New York

Yeshiva and Kollel Harbotzas Torah
Brooklyn, New York

Yeshiva Derech Chaim
Brooklyn, New York

Yeshiva Gedolah Imrei Yosef D'Spinka
Brooklyn, New York

Yeshiva Karlin Stolin
Brooklyn, New York

Yeshiva Mikdash Melech
Brooklyn, New York

Yeshiva of the Telshe Alumni
Riverdale, New York

Yeshiva Shaar Hatorah
Kew Gardens, New York

Yeshiva University
New York, New York

Yeshivas Novominsk
Brooklyn, New York

APPENDIX B

FOCUS GROUP EMAIL INVITATION

Subject line: Tell us about your on-line college search process.

Dear CUNY student:

I need your help! My name is Bruce Neimeyer, and I am a doctoral student as the University of Pittsburgh currently working on a project to help colleges and researchers better understand how students are using on-line college information to assist them with their college choice. I hope that this information will assist these individuals to better understand and meet the needs of students like you! More specifically, this interview opportunity will ask you to participate in an on-line interview where I will ask a small group of student to relate their on-line experiences with searching for a college. Our interactive session would last approximately an hour and will occur in the coming week.

As a token of my thanks, each discussion group participant will receive a **$25 dollar Amazon.com gift card.** By answering a few quick questions on my web survey, you'll help to ensure that my group consists of a wide range of students. Also, this survey will ask you to indicate dates and times which would be convenient for you. Please click on the link below to begin the process.

http://www.surveymethods.com/EndUser.aspx?FADEB2AAF3BDACA0. *(If the hyperlink isn't active, please copy and paste the URL into your Web browser.)*

You will receive a confirmation e-mail with log in instructions a few days prior to your focus group if you are selected. You don't need to do anything in preparation, just come willing to share your thoughts. You will however, need to be able to use both a phone and a computer with an Internet connection to take advantage of this opportunity.

Your responses to this interview will be kept completely confidential, private and protected. We will not share your individual responses or any other personally-identifying information with anyone. A link to the complete details regarding the privacy of your information is provided below.

Please sign up today to participate in this important interview!

Sincerely,
Bruce C. Neimeyer
Doctoral Student
University of Pittsburgh
WWPH 5905
Pittsburgh, PA 15260
www.pitt.edu
****

Why did I get this email?
You received this e-mail because you have an active email address with CUNY who has agreed to allow this researcher to solicit participants for this important study.

How do I unsubscribe from receiving future e-mails?
Go to: http://cybercollegesearch.weebly.com/remove-my-email-from-the-mailing-list.html

What is your privacy policy?
Go to http://cybercollegesearch.weebly.com/privacy-policy.html

Questions or concerns?
Please contact Bruce Neimeyer cybercollegesearch@gmail.com if you have questions about this survey. I can also be reached at 646 709-8681

APPENDIX C

QUALIFICATION SURVEY FOR FOCUS GROUP AND RESULTS

Cybernetworks: Focus Group Qualification

Page 1 - Focus Group Date Selection

1. Please select a FIRST CHOICE focus group date and time.
   --Please Select--
2. Please select a SECOND CHOICE focus group date and time. If you do not have a second choice please select NONE.
   --Please Select--
3. If none of these dates and times are convenient for you and you would still like to participate, please indicate a date and either the 4-5 pm or 7-8 pm time slot that would be good for you in the box below. Although unlikely, If we receive enough interest in a similar date and time, we may offer it.

Page 2 - Demographic Information

4. What is your gender?
   --Please Select--
5. Please select the ethnic group to which you belong.
   --Please Select--
6. Where you born in the United States? If no, please type in the name of the country in which you were born in the additional comments box.
   ○ Yes ○ No
   Additional Comments
7. Did either of your parents attend college?
   ○ Yes ○ No
8. To the best of your knowledge, what income range best reflects your family's yearly income?
   --Please Select--
9. What was your grade average in high school ?
   --Please Select--
10. What CUNY college do you currently attend?
    - ☐ BMCC
    - ☐ KCC
    - ☐ College of Staten Island
    - ☐ Queens College
    - ☐ Brooklyn College
    - ☐ If other, please specify

Page 3 - Address Information

11. Please provide the following information so that we can confirm your participation send you the instruction about how to sign in for your scheduled date and time.

First Name	
Last Name	
Address	
Address	
City	
US State	--Please Select--
Zip Code	
Home Phone	
Cell Phone	
Email Address	

Survey Methods

Ask, Analyze, Improve

Survey Creation, Deployment, & Analysis Tools for Businesses

Survey: Cybernetworks: Focus Group Qualification

Report: Default Report

Survey Status		Respondent Statistics		Points Summary:
Status:	Closed	**Total Responses:**	90	No Points Questions used in this survey.
Deploy Date:	09/16/2008	**Completes:**	64	
Closed Date:	10/01/2008	**Partials:**	26	

Convert to PDF
Email PDF
Export to Excel

View Questions: 1 to 5

1. Please select a FIRST CHOICE focus group date and time.

	Responses	Percent
Wednesday, October 1, 2008 from 7-8 pm:	21	23.86%
Thursday, October 2, 2008 from 4-5 pm:	9	10.23%
Sunday, October 5, 2008 from 7-8 pm:	29	32.95%
Tuesday, October 7, 2008 from 4-5 pm:	11	12.5%
Tuesday, October 7, 2008 from 7-8 pm:	10	11.36%
Wednesday, October 8, 2008 from 7-8 pm:	8	9.09%
Total Responded to this question:	88	97.78%
Total who skipped this question:	2	2.22%
Total:	90	100%

2. Please select a SECOND CHOICE focus group date and time. If you do not have a second choice please select NONE.

	Responses	Percent
Wednesday, October 1, 2008 from 7-8 pm:	4	4.94%
Thursday, October 2, 2008 from 4-5 pm:	5	6.17%
Sunday, October 5, 2008 from 7-8 pm:	16	19.75%
Tuesday, October 7, 2008 from 4-5 pm:	4	4.94%
Tuesday, October 7, 2008 from 7-8 pm:	15	18.52%
Wednesday, October 8, 2008 from 7-8 pm:	16	19.75%
NONE:	21	25.93%
Total Responded to this question:	81	90%
Total who skipped this question:	9	10%
Total:	90	100%

3. If none of these dates and times are convenient for you and you would still like to participate, please indicate a date and either the 4-5 pm or 7-8 pm time slot that would be good for you in the box below. Although unlikely, If we receive enough interest in a similar date and time, we may offer it.

	Responses	Percent
Responses:	7	100%
Total Responded to this question:	7	7.78%
Total who skipped this question:	83	92.22%
Total:	90	100%

4. What is your gender?

	Responses	Percent
Male:	29	34.52%
Female:	55	65.48%
Total Responded to this question:	84	93.33%
Total who skipped this question:	6	6.67%
Total:	90	100%

5. Please select the ethnic group to which you belong.

	Responses	Percent
White or Caucasian:	31	36.9%
African American, African, Black:	14	16.67%
Asian American, Asian, incl. Indian Subcontinent:	20	23.81%
Hispanic, Latino:	12	14.29%
Mexican American, Chicano:	1	1.19%
Puerto Rican:	1	1.19%
Native American/Alaskan Native:	0	0%
Native Hawaiian, Pacific Islander:	0	0%
Prefer to not answer:	5	5.95%
Total Responded to this question:	84	93.33%
Total who skipped this question:	6	6.67%
Total:	90	100%

6. Where you born in the United States? If no, please type in the name of the country in which you were born in the additional comments box.

	Responses	Percent
Yes:	55	65.48%
No:	29	34.52%
Additional Comments :	23	27.38%
Total Responded to this question:	84	93.33%
Total who skipped this question:	6	6.67%
Total:	90	100%

7. Did either of your parents attend college?

	Responses	Percent
Yes:	44	52.38%
No:	40	47.62%
Total Responded to this question:	84	93.33%
Total who skipped this question:	6	6.67%
Total:	90	100%

8. To the best of your knowledge, what income range best reflects your family's yearly income?

	Responses	Percent
$350,000 and above:	2	2.38%
$100,000 - $349,999:	3	3.57%
$99,999 - $65,000:	9	10.71%
$64,999 - $35,000:	13	15.48%
$34,999 and below:	30	35.71%
Don't know:	27	32.14%
Total Responded to this question:	84	93.33%
Total who skipped this question:	6	6.67%
Total:	90	100%

9. What was your grade average in high school ?

	Responses	Percent
A:	30	35.71%
B:	37	44.05%
C:	15	17.86%
D or below:	2	2.38%
Total Responded to this question:	84	93.33%
Total who skipped this question:	6	6.67%
Total:	90	100%

10. What CUNY college do you currently attend?

	Responses	Percent
BMCC:	16	19.05%
KCC:	8	9.52%
College of Staten Island:	10	11.9%
Queens College:	13	15.48%
Brooklyn College:	37	44.05%
If other, please specify :	0	0%
Total Responded to this question:	84	93.33%
Total who skipped this question:	6	6.67%
Total:	90	100%

11. Please provide the following information so that we can confirm your participation send you the instruction about how to sign in for your scheduled date and time.

	Responses	Percent
First Name:	60	100%
Last Name:	60	100%
Address:	60	100%
Address:	8	13.33%
City:	60	100%
US State:	59	98.33%
Zip Code:	60	100%
Home Phone:	42	70%
Cell Phone:	42	70%
Email Address:	57	95%
Total Responded to this question:	60	66.67%
Total who skipped this question:	30	33.33%
Total:	90	100%

APPENDIX D

FOCUS GROUP CONFIRMATION EMAIL

Subject Line: Focus Group Confirmation: Wednesday October 8th, 2008, at 7:00 pm (EDT).

Dear [Students First Name]:

Congratulations! You have been selected from the volunteers to participate in the **Wednesday October 8th, 2008, at 7:00 pm (EDT).** on-line focus group concerning your perspectives on the college search and selection process and more specifically your use of web based resources to assist you. You will also receive your **$25 dollar Amazon.com gift certificate** after completing this focus group. Remember, you only need to be in front of a computer and be able to call the 800 number provided below in order to participate. You can do this focus group from anywhere!

The session will be held on Wednesday October 8th, 2008, at 7:00 pm (EDT).

Please follow these instructions:
You will need to call **1-800-610-4500** and enter the following password: **171712**.
Copy this address and paste it into your web browser:
https://www.livemeeting.com/cc/performainc/join.
Copy and paste the required information:

Meeting ID: **G733DZ**
Entry Code: **FG6**
Location: https://www.livemeeting.com/cc/performainc

If asked, please enter your FIRST name only, and your EMAIL address to confirm your attendance. If you are asked for your COMPANY, please enter the name of your current college.

If you still cannot enter the meeting, contact support:
http://r.office.microsoft.com/r/rlidLiveMeeting?p1=12&p2=en_US&p3=LMInfo&p4=support

Please join 15 minutes before the scheduled session to allow time for set-up.

FIRST TIME USERS: To save time before the meeting, check your system to make sure it is compatible with Microsoft Office Live Meeting: http://go.microsoft.com/fwlink/?LinkId=90703

This Live Meeting invitation is a personal invitation; it should not be forwarded.
Again, thank you for signing up for this important focus group! Remember, you'll receive your $25 Amazon.com gift certificate within two weeks after the session!

Sincerely,
Bruce C. Neimeyer
Doctoral Student and Principle Investigator
University of Pittsburgh
Pittsburgh, PA
P: 646-709-8681

APPENDIX E

ON-LINE SURVEY EMAIL INVITATION

Subject: CUNY Student Cybernetwork Survey

Dear [First Name]:

My name is Bruce Neimeyer, and I am a doctoral student as the University of Pittsburgh currently working on a research project in coordination with CUNY and its Institutional Review Board (IRB) to better assist students in their college search process by understanding their use of on-line social networks in the college search process.

Because you have an active email address with CUNY, I would like to invite you to participate in this study by completing an on-line survey that takes approximately 15–20 minutes. The link to the survey is listed below my name in this email.

For your participation in the survey you will be entered in a drawing for one of two $100 Amazon.com gift cards. The entry form is provided to you at the end of the on-line survey.

Your responses to this on-line survey will be kept completely confidential, private and protected. I will not share your individual responses or any other personally-identifying information with anyone. For information on our privacy policy please click here <http://cybercollegesearch.weebly.com/privacy-policy.html> .

Thank you in advance for participating in this important research!

Sincerely,
Bruce C. Neimeyer
Ph.D. Candidate
University of Pittsburgh

APPENDIX F

ON-LINE SURVEY EMAIL REMINDER

Subject: CUNY Student Cybernetwork Survey

Dear <first name>:

This is a reminder to you regarding the completion of an on-line survey about the use of social networks by CUNY students in their college search. Your participation will be very helpful to me for the completion of my degree as well as helping CUNY to better serve students such as yourself as they research the best possible college to continue their education.

The average responder is taking less than 18 minutes to complete the survey. In addition, those who do complete the survey are entered into a drawing for one of 2 $100 Amazon.com gift certificates.

Won't you please take a few minutes to complete the survey? Simply click the appropriate link listed after my name below to start the survey now. If you need to stop at some point during the survey, feel free to do so and when you return, you will pick up right where you left off! Just remember that the survey will only be active for a limited time so please respond as soon as possible.

Thank you again for your anticipated participation!

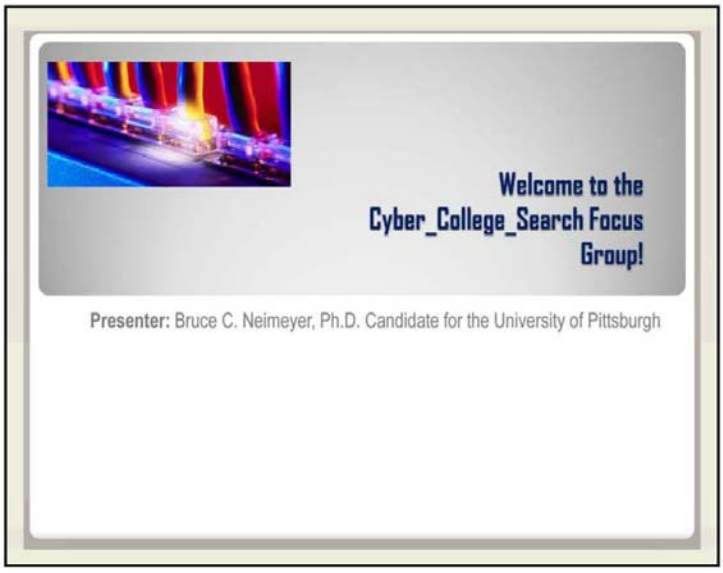
Bruce Neimeyer
Ph.D. Candidate
University of Pittsburgh
School of Education

Click on the following link to take the survey: Click Here
Or copy and paste the following link in your browser to take the survey:
http://www.surveymethods.com/EndUser.aspx?B385FBE3B4F1E5E8B1F6

Click on the following link to not take this and other surveys from us: Click Here
If clicking on the link does not work, copy and paste the following URL into your browser.
http://www.surveymethods.com/EndUser.aspx?B38FFBE3B4F1E5E8B1F6

APPENDIX G

FOCUS GROUP MODERATORS GUIDE AND POWERPOINT PRESENTATION



- How are different students using the internet to research and select colleges?
- How are they using this technology to facilitate their social networks for this task?
- How is it used to facilitate new networks and information during this research and selection period?

Focus Group Purpose

- Each of you will receive a $25 Amazon.com gift card for participating in today's focus group. I will use your Live Meeting sign in information to verify who has attended.
- Everyone should respond so that I can get all possible perspectives from those of you here tonight.
- All of your responses will be kept completely confidential and detached from you personally.
- I will now ask that each of you to tell us your first name, your hometown.

Housekeeping & Introductions

Cybernetworks:

- Use of the world wide web to view web sites and gather information about schools.
- Familiar sources that we connect with through web technology. (email. Facebook, etc.)
- New groups that we connect with through web technology. (email, Facebook, etc.)

Does anyone have any questions about Cybernetworks?

Definitions

Question 1

- What were the specific sources that you used to search and select a college which you considered to be **helpful** and why?
- This should include:
  - **people,**
  - **print material,**
  - **online resources.**

SEARCH AND SELECTION

Question 2

- What were the specific sources that you used to search and select a college which you considered to be **unhelpful** and why?
- This should include:
  - **people,**
  - **print material,**
  - **online resources.**

SEARCH AND SELECTION

Question 3

- How did you learn about the existence of these sources we have discussed initially? Please be specific as to the source and how you found out about it.

For example:

I heard from my guidance counselor about helpful websites such as The Princeton Review to start to explore the types of colleges I might consider.

OR

A number of my friends communicate via Facebook, so I would read about their experiences on their pages and posted or emailed questions to them through Facebook to get a better understanding about their experiences at xyz college.

SEARCH AND SELECTION

Question 4

Were there any cybernetworks that you considered using during this process that you did not use and why?

NOTE: These are:

1. viewing of web sites to gather information;
2. internet communication formats such as email, chat rooms, Facebook, etc to connect with resources either known to you;
3. using the internet communication formats listed to establish or tap new sources/individuals for this task.

SEARCH AND SELECTION

Question 5

Considering these cybernetworks that the group has discussed, what was your **level of trust** in each of them, their information and why?

SEARCH AND SELECTION

Question 6

Was there any difference between what you thought you were going to get from these cybernetworks before you used them versus what you ultimately got from them?

Which ones and how was it different?

SEARCH AND SELECTION

Question 7

Are there other people or sources you used or did not use during your college search and selection that we have not discussed so far?

Did you use them and why?

SEARCH AND SELECTION

Question 8

Let's consider all the cybernetworks we have discussed earlier. What were the pieces of information that you attempted to get from each of these?

SEARCH AND SELECTION

Question 9

Did any of these **cybernetworks** provide you with information that was original and specific to that network and that you could not get anywhere else?

What was that information?

Why was this information not available from another sources?

SEARCH AND SELECTION

Question 10 *What percentage would you assign to each of the three forms of cybernetworks that would reflect your use of them during your college* ***SEARCH*** *stage.* ***[Total ≠ 100%]***

1. Use of the world wide web to view web sites and gather information about schools.
2. Familiar sources that we connect with through web technology. (email. Facebook, etc.)
3. New groups that we connect with through web technology.(email, Facebook, etc.)

SEARCH

Question 11- *What percentage would you assign to each of the three forms of cybernetworks that would reflect your use of them during your college* ***SELECTION*** *stage.* ***[Total ≠ 100%]***

1. Use of the world wide web to view web sites and gather information about schools.
2. Familiar sources that we connect with through web technology. (email. Facebook, etc.)
3. New groups that we connect with through web technology.(email, Facebook, etc.)

SELECTION

Question 12

In relation to your use of these cybernetworks, would you say that your fellow classmates where using and engaging with them in similar ways or do you feel that you were unique in your use of them in the college search and selection process?

SEARCH AND SELECTION

THANK YOU for participating in this focus group!

Any questions or comments can be sent directly to cybercollegesearch@gmail.com .

THANK YOU and GOOD NIGHT!

APPENDIX H

ON-LINE SURVEY AND RESULTS FROM SUVERYMETHODS.COM

The survey and the complete results and can be found at the following URL:

http://www.surveymethods.com/Publish.aspx?U7XDDGSHnLI%3d

APPENDIX I

UNIVERSITY OF PITTSBURGH IRB APPROVAL

University of Pittsburgh

Institutional Review Board

3500 Fifth Avenue
Ground Level
Pittsburgh, PA 15213
(412) 383-1480
(412) 383-1508 (fax)
http://www.irb.pitt.edu

Memorandum

TO:	BRUCE NEIMEYER
FROM:	SUE BEERS PHD, Vice Chair
DATE:	5/19/2008
IRB#:	PRO08010141
SUBJECT:	CYBERNETWORKS AND THE COLLEGE SELECTION PROCESS

The above-referenced project has been reviewed by the Institutional Review Board. Based on the information provided, this project meets all the necessary criteria for an exemption, and is hereby designated as "exempt" under section 45 CFR 46.101(b)(2)surveys, interviews, tests.

Please note the following information:

- If any modifications are made to this project, please contact the IRB Office to ensure it continues to meet the exempt category.
- Upon completion of your project, be sure to finalize the project by submitting a termination request.

Please be advised that your research study may be audited periodically by the University of Pittsburgh Research Conduct and Compliance Office.

APPENDIX J

CUNY IRB APPROVAL

CUNY-Wide IRB
Office of Research Conduct
535 E 80th Street
New York, New York 10021
212.794.5504
212.794.5378, fax

November 3, 2008

Bruce Neimeyer
506 W 113th Street
Apt 3A
NY, NY 10025

RE: **CW-08-006 Cybernetworks and the College Selection Process**

Dear Mr. Neimeyer:

The CUNY-Wide IRB: IRB00000149 has approved the above study involving humans as research subjects. This project is - under 45 CFR 46. No further IRB review is necessary unless modifications to the protocol related to human research subjects are proposed.

IRB Number: CW-08-006 This number is a CUNY-Wide IRB: IRB00000149 number that should be used on all correspondence with the IRB regarding this study.

Approval Date: October 29, 2008

Consent Form: If you are using a consent form, all research subjects must use the approved and stamped consent form. You are responsible for maintaining signed consent forms for each research subject for a period of at least three years after study completion.

Mandatory Reporting to the IRB: The principal investigator must report, within five business days, any serious problem, adverse effect, or outcome that occurs with frequency or degree of severity greater than that anticipated. In addition, the principal investigator must report any event or series of events that prompt the temporary or permanent suspension of a research project involving human subjects or any deviations from the approved protocol.

Amendments/Modifications: All amendments/modifications of protocols involving human subjects must have prior IRB approval, except those involving the prevention of immediate harm to a subject. Amendments/modifications for the prevention of immediate harm to a subject must be reported within 24 hours to the IRB.

If you have any questions, please feel free to contact Arita Winter in the IRB Office at 212.794.5504.

Good luck on your project.

Sincerely,

Eileen Gigliotti
IRB Chair

Sign the Verification Statement below. Return the original signed copy of this letter to the IRB Office and retain a copy for your records. The IRB Office must receive a copy of the signed verification statement before research may begin.

VERIFICATION:

BY SIGNING BELOW, I ACKNOWLEDGE THAT I HAVE RECEIVED THIS APPROVAL AND AM AWARE OF, AND AGREE TO ABIDE BY, ALL OF ITS STIPULATIONS IN ORDER TO MAINTAIN ACTIVE APPROVAL STATUS, INCLUDING TIMELY SUBMISSION OF PROPOSED PROTOCOL MODIFICATIONS, AS WELL AS PROMPT REPORTING OF ADVERSE EVENTS, SERIOUS UNANTICIPATED PROBLEMS, AND PROTOCOL DEVIATIONS. I AM AWARE THAT IT IS MY RESPONSIBILITY TO BE KNOWLEDGEABLE OF ALL FEDERAL, STATE AND UNIVERSITY REGULATIONS REGARDING HUMAN SUBJECTS RESEARCH INCLUDING CUNY'S FEDERALWIDE ASSURANCE (FWA) WITH THE DEPARTMENT OF HEALTH AND HUMAN SERVICES OFFICE OF HUMAN RESEARCH PROTECTIONS.

Signature of Principal Investigator — Date 11/13/08

Signature of Faculty Advisor for Student Research — Date

APPENDIX K

NVIVO NODE SUMMARY FOR CHAT TRANSCRIPTS

Node Summary Report

Project: Cybernetworks and the College Selection Process: An inquiry into Immigrant vs. Native Students in the U.S.

Generated: 9/23/2008 11:21 AM

Tree Nodes\Academics\Academic Readiness — **Tree Node**

Description whether the student feels ready for the academic rigor of the particular school or program.

Created On 5/29/2008 12:58 PM **By** BCN

Modified On 8/27/2008 11:40 AM **By** BCN

Users 1

Cases 2

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	2	79	16			
Total	**2**	**2**	**79**	**16**			**0**

Tree Nodes\Academics — **Tree Node**

Description This represents the interest in various academic offerings at the college which are of interest and or importance to the student.

Created On 5/22/2008 5:35 PM **By** BCN

Modified On 8/28/2008 3:53 PM **By** BCN

Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	55	8,292	1810			
Total	**3**	**55**	**8292**	**1810**			**0**

Tree Nodes\Application Process\Admissions Application — **Tree Node**

Description This covers the parts required, status, timeline, mechanics of the application.

Created On 5/24/2008 3:19 PM **By** BCN

Modified On 8/28/2008 3:53 PM **By** BCN

Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	71	3,801	639			
Total	**3**	**71**	**3801**	**639**			**0**

Tree Nodes\Institutional Characteristics\Alumni — **Tree Node**

Description Characteristics for fitting in based on alumni

Created On 8/27/2008 12:15 PM **By** BCN

Modified On 8/28/2008 12:01 PM **By** BCN

Users 1

Cases 1

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	1	2	247	40			
Total	**1**	**2**	**247**	**40**			**0**

Tree Nodes\Application Process — **Tree Node**

Description This indicates concerns over required documents, what is in them, how to complete them, etc.

Created On 5/22/2008 5:42 PM **By** BCN

Modified On 8/28/2008 3:54 PM **By** BCN

Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	79	3,992	657			
Total	**3**	**79**	**3992**	**657**			**0**

Free Nodes\Attempt to express emotion — **Free Node**

Description These are either symbolic representations or words used to express emotion to others.

Created On 5/29/2008 1:52 PM **By** BCN

Modified On 8/28/2008 3:37 PM **By** BCN

Users 1

Cases 2

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	11	53	27			
Total	**2**	**11**	**53**	**27**			**0**

Tree Nodes\Educational Outcomes\Career options — **Tree Node**

Created On 5/24/2008 5:43 PM **By** BCN
Modified On 8/28/2008 3:05 PM **By** BCN
Users 1
Cases 2

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	6	1,635	316			
Total	**2**	**6**	**1635**	**316**			**0**

Tree Nodes\Application Process\chance to be admitted — **Tree Node**

Created On 5/24/2008 3:36 PM **By** BCN
Modified On 8/28/2008 3:54 PM **By** BCN
Users 1
Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	24	1,484	239			
Total	**3**	**24**	**1484**	**239**			**0**

Tree Nodes\Academics\Classroom Atmosphere — **Tree Node**

Created On 5/28/2008 12:23 PM **By** BCN
Modified On 8/28/2008 3:36 PM **By** BCN
Users 1
Cases 2

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	4	1,413	308			
Total	**2**	**4**	**1413**	**308**			**0**

Tree Nodes\Institutional Characteristics\College — **Tree Node**

Description Affiliation, characteristics

Created On 5/24/2008 5:01 PM **By** BCN
Modified On 8/28/2008 3:19 PM **By** BCN
Users 1
Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	37	2,995	572			
Total	**3**	**37**	**2995**	**572**			**0**

Free Nodes\communication barriers — **Free Node**

Description These are examples of where individuals in an online exchange are not able to express themselves effectively. This is either stated or can be observed by the ending of the exchange or resulting in many exchanges seeking clarification.

Created On 5/24/2008 5:22 PM **By** BCN

Modified On 8/28/2008 3:46 PM **By** BCN

Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	28	2,556	554			
Total	**3**	**28**	**2556**	**554**			**0**

Free Nodes\Confirming Truth — **Free Node**

Created On 5/28/2008 12:47 PM **By** BCN

Modified On 8/27/2008 11:35 AM **By** BCN

Users 1

Cases 1

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	1	7	267	30			
Total	**1**	**7**	**267**	**30**			**0**

Tree Nodes\Financial\Cost — **Tree Node**

Created On 5/24/2008 5:07 PM **By** BCN

Modified On 8/27/2008 11:40 AM **By** BCN

Users 1

Cases 2

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	10	665	149			
Total	**2**	**10**	**665**	**149**			**0**

Tree Nodes\Academics\Degree Requirements — **Tree Node**

Description courses required, volume of credits, degree requjirements.

Created On 5/24/2008 5:20 PM **By** BCN

Modified On 8/28/2008 2:59 PM **By** BCN

Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	15	3,359	686			
Total	**3**	**15**	**3359**	**686**			**0**

Tree Nodes\Educational Outcomes — **Tree Node**

Created On 5/24/2008 5:42 PM **By** BCN

Modified On 8/28/2008 3:05 PM **By** BCN

Users 1

Cases 2

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	5	1,575	302			
Total	**2**	**5**	**1575**	**302**			**0**

Tree Nodes\Financial\Employment — **Tree Node**

Created On 5/27/2008 2:41 PM **By** BCN

Modified On 8/28/2008 3:39 PM **By** BCN

Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	6	984	232			
Total	**3**	**6**	**984**	**232**			**0**

Free Nodes\Expert Information Seeking — **Free Node**

Description In these online exchanges, the "expert" can be seen seeking information or knowledge as well.

Created On 5/25/2008 9:32 AM **By** BCN

Modified On 5/25/2008 9:36 AM **By** BCN

Users 1

Cases 1

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	1	1	228	40			
Total	**1**	**1**	**228**	**40**			**0**

Free Nodes\Facilitators of trust — **Free Node**

Description sometimes the trust is facilitated between the individuals in the room and not necessarily the "experts"

Created On 5/24/2008 5:48 PM **By** BCN

Modified On 8/28/2008 3:39 PM **By** BCN

Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	36	4,031	910			
Total	**3**	**36**	**4031**	**910**			**0**

Tree Nodes\Institutional Characteristics\Faculty — **Tree Node**

Created On 5/28/2008 12:02 PM **By** BCN
Modified On 8/28/2008 3:36 PM **By** BCN
Users 1
Cases 2

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	9	1,903	390			
Total	**2**	**9**	**1903**	**390**			**0**

Tree Nodes\Financial\Financial Aid — **Tree Node**

Created On 5/24/2008 5:07 PM **By** BCN
Modified On 8/28/2008 3:25 PM **By** BCN
Users 1
Cases 2

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	13	1,234	278			
Total	**2**	**13**	**1234**	**278**			**0**

Tree Nodes\Financial — **Tree Node**

Description All things such as cost, tuition, fees, financial aid, scholarships, etc

Created On 5/24/2008 5:06 PM **By** BCN
Modified On 8/28/2008 3:39 PM **By** BCN
Users 1
Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	22	2,417	534			
Total	**3**	**22**	**2417**	**534**			**0**

Tree Nodes\Informational sources referrals\Formal networks — **Tree Node**

Description experts in the field

Created On 5/24/2008 5:30 PM **By** BCN
Modified On 5/24/2008 5:33 PM **By** BCN
Users 0
Cases 0

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
				0			0
Total			**0**	**0**		**00:00:00**	**0**

Tree Nodes\Informational sources referrals\Formal Online Sources — **Tree Node**

Description These are expert hosted sites, exchanges

Created On 5/24/2008 5:30 PM **By** BCN

Modified On 5/24/2008 5:35 PM **By** BCN

Users **1**

Cases **1**

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	1	2	21	4			
Total	**1**	**2**	**21**	**4**			**0**

Tree Nodes\Institutional Characteristics\Geographical location — **Tree Node**

Created On 5/28/2008 12:42 PM **By** BCN

Modified On 8/28/2008 3:44 PM **By** BCN

Users **1**

Cases **2**

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	9	2,430	516			
Total	**2**	**9**	**2430**	**516**			**0**

Tree Nodes\Application Process\importance of academics — **Tree Node**

Description grades, score, course choices

Created On 5/24/2008 3:45 PM **By** BCN

Modified On 8/28/2008 11:53 AM **By** BCN

Users **1**

Cases **3**

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	13	784	119			
Total	**3**	**13**	**784**	**119**			**0**

Tree Nodes\Informational sources referrals\Informal Networks **Tree Node**

Description These are other social networks which are not necessarily experts or knowledgeable in the field.

Created On 5/24/2008 5:33 PM **By** BCN

Modified On 5/24/2008 5:33 PM **By** BCN

Users **0**

Cases **0**

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
				0			0
Total			**0**	**0**		**00:00:00**	**0**

Tree Nodes\Informational sources referrals\Informal Onlnie sources **Tree Node**

Description non expert hosted online sources

Created On 5/24/2008 5:31 PM **By** BCN

Modified On 8/27/2008 11:46 AM **By** BCN

Users **1**

Cases **1**

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	1	1	62	12			
Total	**1**	**1**	**62**	**12**			**0**

Tree Nodes\Informational sources referrals **Tree Node**

Description formal and information/ inperson or online sources of information to which individuals tell others to consult.

Created On 5/24/2008 5:28 PM **By** BCN

Modified On 8/27/2008 11:46 AM **By** BCN

Users **1**

Cases **2**

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	3	83	16			
Total	**2**	**3**	**83**	**16**			**0**

Tree Nodes\Institutional Characteristics — **Tree Node**

Created On 5/24/2008 4:58 PM **By** BCN

Modified On 8/28/2008 3:52 PM **By** BCN

Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	77	8,984	1934			
Total	**3**	**77**	**8984**	**1934**			**0**

Cases\International Admission Chat Transcript 11 9 07 Mt Holyock College — **Case**

Created On 5/22/2008 4:31 PM **By** BCN

Modified On 5/22/2008 5:39 PM **By** BCN

Users 1

Cases 9

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	1	1	10,739	2431			
Total	**1**	**1**	**10739**	**2431**			**0**

Cases\International admissions chat transcript 11 9 07 room 1 Mt. Holyock College — **Case**

Created On 5/22/2008 4:33 PM **By** BCN

Modified On 5/24/2008 3:16 PM **By** BCN

Users 1

Cases 0

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	1	1	10,627	2115			
Total	**1**	**1**	**10627**	**2115**			**0**

Free Nodes\Issues of Fear — **Free Node**

Description There is always a constant fear or worry in the questions. Will I get in, how will I fit, do I need x documents, do I need x grades or x exam scores.

Created On 5/28/2008 12:26 PM **By** BCN

Modified On 8/28/2008 3:25 PM **By** BCN

Users 1

Cases 2

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	18	1,642	258			
Total	**2**	**18**	**1642**	**258**			**0**

Tree Nodes\Educational Outcomes\Monetary results — **Tree Node**

Created On 5/24/2008 5:43 PM **By** BCN
Modified On 8/27/2008 11:40 AM **By** BCN
Users 1
Cases 1

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	1	1	60	14			
Total	1	1	60	14			0

Cases\Mt. Holyock 1 8 08 room 2 — **Case**

Created On 5/22/2008 5:18 PM **By** BCN
Modified On 5/22/2008 5:39 PM **By** BCN
Users 1
Cases 9

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	2	17,649	4031			
Total	2	2	17649	4031			0

Cases\Mt. Holyock 1 8 2008 — **Case**

Created On 5/22/2008 5:10 PM **By** BCN
Modified On 5/22/2008 5:39 PM **By** BCN
Users 1
Cases 9

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	2	15,748	2759			
Total	2	2	15748	2759			0

Cases\Mt. Holyock 11 1 07 room 1 — **Case**

Created On 5/22/2008 5:20 PM **By** BCN
Modified On 5/22/2008 5:39 PM **By** BCN
Users 1
Cases 9

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	2	17,589	2899			
Total	2	2	17589	2899			0

Cases\Mt. Holyock 11 1 07 room 2 — **Case**

Created On 5/22/2008 5:28 PM **By** BCN
Modified On 5/22/2008 5:39 PM **By** BCN
Users 1
Cases 9

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	2	11,342	2004			
Total	**2**	**2**	**11342**	**2004**			**0**

Cases\Mt. Holyock 11 13 07 room 1 — **Case**

Created On 5/22/2008 5:21 PM **By** BCN
Modified On 5/22/2008 5:39 PM **By** BCN
Users 1
Cases 9

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	2	18,487	3377			
Total	**2**	**2**	**18487**	**3377**			**0**

Cases\Mt. Holyock 11 13 07 room 2 — **Case**

Created On 5/22/2008 5:23 PM **By** BCN
Modified On 5/22/2008 5:39 PM **By** BCN
Users 1
Cases 9

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	2	14,211	2067			
Total	**2**	**2**	**14211**	**2067**			**0**

Cases\Mt. Holyock 12 5 07 room 1 — **Case**

Created On 5/22/2008 5:26 PM **By** BCN
Modified On 8/27/2008 11:35 AM **By** BCN
Users 1
Cases 9

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	2	16,421	2857			
Total	**2**	**2**	**16421**	**2857**			**0**

Cases\Mt. Holyock 12 5 07 room 2 — **Case**

Created On 5/22/2008 5:25 PM **By** BCN
Modified On 5/22/2008 5:39 PM **By** BCN
Users 1
Cases 9

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	2	16,421	2857			
Total	**2**	**2**	**16421**	**2857**			**0**

Cases\Mt. Holyock Parent Chat 11 14 07 — **Case**

Created On 5/22/2008 5:13 PM **By** BCN
Modified On 5/22/2008 5:39 PM **By** BCN
Users 1
Cases 9

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	2	17,652	2031			
Total	**2**	**2**	**17652**	**2031**			**0**

Tree Nodes\Educational Outcomes\Networking results — **Tree Node**

Created On 5/24/2008 5:43 PM **By** BCN
Modified On 8/27/2008 11:40 AM **By** BCN
Users 1
Cases 1

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	1	1	60	14			
Total	**1**	**1**	**60**	**14**			**0**

Tree Nodes\Academics\Other academic opportunities — **Tree Node**

Description study abroad, research, etc which add to but are not academic programs.

Created On 5/24/2008 3:18 PM **By** BCN
Modified On 8/28/2008 3:51 PM **By** BCN
Users 1
Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	28	6,843	1508			
Total	**3**	**28**	**6843**	**1508**			**0**

Tree Nodes\Institutional Characteristics\Physical Plant — **Tree Node**

Description These are questions regarding the facilities such as the updated nature of the physical rooms or any other questions regarding the physical hardware of the college.

Created On 5/29/2008 1:41 PM **By** BCN

Modified On 8/28/2008 11:47 AM **By** BCN

Users 1

Cases 2

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	2	461	112			
Total	**2**	**2**	**461**	**112**			**0**

Tree Nodes\Institutional Characteristics\Prospective Students — **Tree Node**

Created On 5/24/2008 5:17 PM **By** BCN

Modified On 8/28/2008 3:17 PM **By** BCN

Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	16	838	239			
Total	**3**	**16**	**838**	**239**			**0**

Tree Nodes\Student Affairs or Student Life\Residence Life — **Tree Node**

Created On 5/25/2008 8:49 AM **By** BCN

Modified On 8/28/2008 3:42 PM **By** BCN

Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	12	1,056	258			
Total	**3**	**12**	**1056**	**258**			**0**

Tree Nodes\Financial\Scholarship — **Tree Node**

Created On 5/24/2008 5:07 PM **By** BCN

Modified On 8/28/2008 11:55 AM **By** BCN

Users 1

Cases 2

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	11	874	182			
Total	**2**	**11**	**874**	**182**			**0**

Tree Nodes\Academics\Strength and popularity of programs — **Tree Node**

Created On 5/24/2008 5:09 PM **By** BCN

Modified On 8/28/2008 3:53 PM **By** BCN

Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	22	2,597	632			
Total	**3**	**22**	**2597**	**632**			**0**

Tree Nodes\Student Affairs or Student Life\Student activities — **Tree Node**

Created On 5/25/2008 8:55 AM **By** BCN

Modified On 8/28/2008 3:51 PM **By** BCN

Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	25	5,755	1256			
Total	**3**	**25**	**5755**	**1256**			**0**

Tree Nodes\Student Affairs or Student Life — **Tree Node**

Description These would related to the clubs, organizations as well as rules and regulations that govern students abillty to do or not do things outside of the classroom or academic setting.

Created On 5/25/2008 8:47 AM **By** BCN

Modified On 8/28/2008 3:51 PM **By** BCN

Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	42	7,076	1550			
Total	**3**	**42**	**7076**	**1550**			**0**

Tree Nodes\Student Affairs or Student Life\Student Support — **Tree Node**

Created On 5/28/2008 12:07 PM **By** BCN

Modified On 8/28/2008 3:42 PM **By** BCN

Users 1

Cases 2

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	2	8	1,045	228			
Total	**2**	**8**	**1045**	**228**			**0**

Tree Nodes\Institutional Characteristics\Students — **Tree Node**

Description Characteristics of the students at the college/university

Created On 5/24/2008 5:00 PM **By** BCN

Modified On 8/28/2008 3:52 PM **By** BCN

Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	49	4,845	977			
Total	3	49	4845	977			0

Free Nodes\Support — **Free Node**

Description This is either in the academic or personal nature. What type of survival assistance is there to help them.

Created On 5/27/2008 2:35 PM **By** BCN

Modified On 8/28/2008 3:36 PM **By** BCN

Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	7	1,448	304			
Total	3	7	1448	304			0

Free Nodes\Technical issues — **Free Node**

Description These are issues associated with the technical vehicle used between individuals or among groups which present confusion, distruption or the inability for information exchange to occur.

Created On 5/25/2008 8:37 AM **By** BCN

Modified On 8/28/2008 12:00 PM **By** BCN

Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	11	690	141			
Total	3	11	690	141			0

Free Nodes\Will I fit — **Free Node**

Description These are references which point to the students need to fit in and feel comfortable at the campus.

Created On 5/25/2008 8:32 AM **By** BCN

Modified On 8/28/2008 3:52 PM **By** BCN

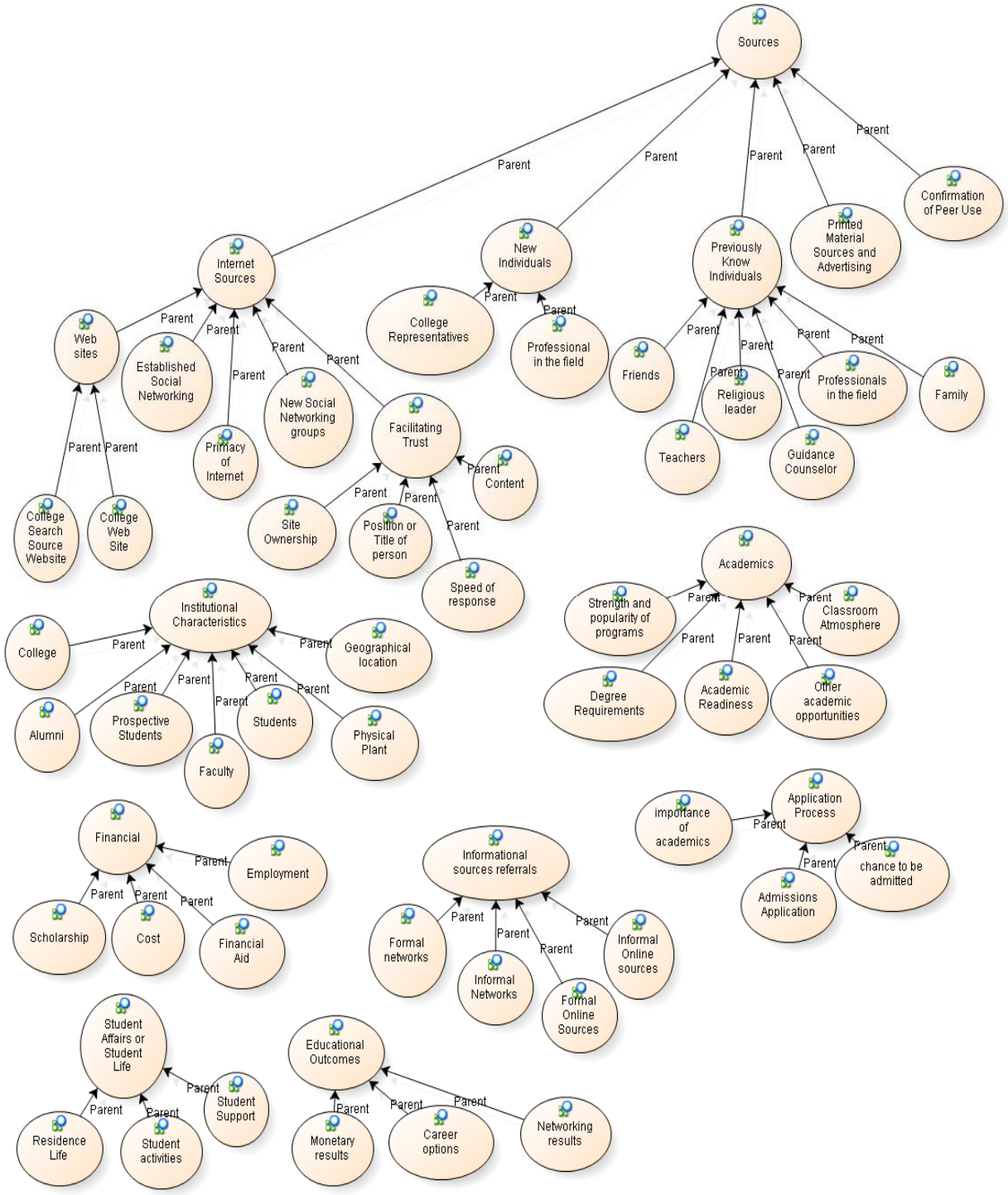
Users 1

Cases 3

Type	Sources	References	Words	Paragraphs	Region	Duration	Rows
Document	3	56	7,226	1586			
Total	3	56	7226	1586			0

APPENDIX L

DIAGRAM OF TREE NODES



APPENDIX M

CROSS-TABULATIONS FOR VARIOUS FORMAL AND INFORMAL NETWORKS

Cross-tabulation for mother rating and place of origin

			Immigrant		
			Yes	No	Total
Mother	Excellent	Count	12	31	43
		% within Immigrant Status	16.4%	22.6%	20.5%
	Very Good	Count	14	35	49
		% within Immigrant Status	19.2%	25.5%	23.3%
	Average	Count	18	31	49
		% within Immigrant Status	24.7%	22.6%	23.3%
	Below Average	Count	1	8	9
		% within Immigrant Status	1.4%	5.8%	4.3%
	Poor	Count	5	6	11
		% within Immigrant Status	6.8%	4.4%	5.2%
	Did Not Use	Count	23	26	49
		% within Immigrant Status	31.5%	19.0%	23.3%
Total		Count	73	137	210
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for father rating and place of origin

			Immigrant		
			Yes	No	Total
Father	Excellent	Count	9	26	35
		% within Immigrant Status	12.3%	19.0%	16.7%
	Very Good	Count	10	27	37
		% within Immigrant Status	13.7%	19.7%	17.6%
	Average	Count	15	23	38
		% within Immigrant Status	20.5%	16.8%	18.1%
	Below Average	Count	5	11	16
		% within Immigrant Status	6.8%	8.0%	7.6%
	Poor	Count	6	9	15
		% within Immigrant Status	8.2%	6.6%	7.1%
	Did Not Use	Count	28	41	69
		% within Immigrant Status	38.4%	29.9%	32.9%
Total		Count	73	137	210
		% within Immigrant Status	100.0%	100.0%	100.0%

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Cross-tabulation for sibling rating and place of origin

			Immigrant		
			Yes	No	Total
Sibling	Excellent	Count	17	23	40
		% within Immigrant Status	23.3%	16.8%	19.0%
	Very Good	Count	11	37	48
		% within Immigrant Status	15.1%	27.0%	22.9%
	Average	Count	11	14	25
		% within Immigrant Status	15.1%	10.2%	11.9%
	Below Average	Count	0	5	5
		% within Immigrant Status	.0%	3.6%	2.4%
	Poor	Count	3	4	7
		% within Immigrant Status	4.1%	2.9%	3.3%
	Did Not Use	Count	31	54	85
		% within Immigrant Status	42.5%	39.4%	40.5%
Total		Count	73	137	210
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for other relative rating and place of origin

			Immigrant		
			Yes	No	Total
Other Relatives	Excellent	Count	5	23	28
		% within Immigrant Status	6.8%	16.8%	13.3%
	Very Good	Count	18	33	51
		% within Immigrant Status	24.7%	24.1%	24.3%
	Average	Count	16	33	49
		% within Immigrant Status	21.9%	24.1%	23.3%
	Below Average	Count	2	3	5
		% within Immigrant Status	2.7%	2.2%	2.4%
	Poor	Count	5	4	9
		% within Immigrant Status	6.8%	2.9%	4.3%
	Did Not Use	Count	27	41	68
		% within Immigrant Status	37.0%	29.9%	32.4%
Total		Count	73	137	210
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for guidance counselor rating and place of origin

			Immigrant		
			Yes	No	Total
Guidance Counselor	Excellent	Count	19	34	53
		% within Immigrant Status	26.0%	24.8%	25.2%
	Very Good	Count	14	42	56
		% within Immigrant Status	19.2%	30.7%	26.7%
	Average	Count	18	20	38
		% within Immigrant Status	24.7%	14.6%	18.1%
	Below Average	Count	4	10	14
		% within Immigrant Status	5.5%	7.3%	6.7%
	Poor	Count	1	4	5
		% within Immigrant Status	1.4%	2.9%	2.4%
	Did Not Use	Count	17	27	44
		% within Immigrant Status	23.3%	19.7%	21.0%
Total		Count	73	137	210
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for college admissions counselor rating and place of origin

			Immigrant		
			Yes	No	Total
College Admissions Counselor	Excellent	Count	16	18	34
		% within Immigrant Status	21.9%	13.1%	16.2%
	Very Go	Count	14	23	37
		% within Immigrant Status	19.2%	16.8%	17.6%
	Average	Count	15	27	42
		% within Immigrant Status	20.5%	19.7%	20.0%
	Below Average	Count	2	7	9
		% within Immigrant Status	2.7%	5.1%	4.3%
	Poor	Count	3	7	10
		% within Immigrant Status	4.1%	5.1%	4.8%
	Did Not Use	Count	23	55	78
		% within Immigrant Status	31.5%	40.1%	37.1%
Total		Count	73	137	210
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for professional in field rating and place of origin

			Immigrant		
			Yes	No	Total
Professional In Field	Excellent	Count	6	7	13
		% within Immigrant Status	8.2%	5.1%	6.2%
	Very Good	Count	7	23	30
		% within Immigrant Status	9.6%	16.8%	14.3%
	Average	Count	14	17	31
		% within Immigrant Status	19.2%	12.4%	14.8%
	Below Average	Count	1	1	2
		% within Immigrant Status	1.4%	.7%	1.0%
	Poor	Count	1	1	2
		% within Immigrant Status	1.4%	.7%	1.0%
	Did Not Use	Count	44	88	132
		% within Immigrant Status	60.3%	64.2%	62.9%
Total		Count	73	137	210
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for current college student rating and place of origin

			Immigrant		
			Yes	No	Total
Current College Student	Excellent	Count	14	29	43
		% within Immigrant Status	19.2%	21.2%	20.5%
	Very Good	Count	18	43	61
		% within Immigrant Status	24.7%	31.4%	29.0%
	Average	Count	17	23	40
		% within Immigrant Status	23.3%	16.8%	19.0%
	Below Average	Count	2	1	3
		% within Immigrant Status	2.7%	.7%	1.4%
	Did Not Use	Count	22	41	63
		% within Immigrant Status	30.1%	29.9%	30.0%
Total		Count	73	137	210
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for college faculty member rating and place of origin

			Immigrant		
			Yes	No	Total
College Faculty Member	Excellent	Count	5	9	14
		% within Immigrant Status	6.8%	6.6%	6.7%
	Very Good	Count	12	20	32
		% within Immigrant Status	16.4%	14.6%	15.2%
	Average	Count	15	12	27
		% within Immigrant Status	20.5%	8.8%	12.9%
	Below Average	Count	1	1	2
		% within Immigrant Status	1.4%	.7%	1.0%
	Poor	Count	0	2	2
		% within Immigrant Status	.0%	1.5%	1.0%
	Did Not Use	Count	40	93	133
		% within Immigrant Status	54.8%	67.9%	63.3%
Total		Count	73	137	210
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for high school teacher rating and place of origin

			Immigrant		
			Yes	No	Total
High School Teacher	Excellent	Count	21	33	54
		% within Immigrant Status	28.8%	24.1%	25.7%
	Very Good	Count	14	41	55
		% within Immigrant Status	19.2%	29.9%	26.2%
	Average	Count	20	24	44
		% within Immigrant Status	27.4%	17.5%	21.0%
	Below Average	Count	5	4	9
		% within Immigrant Status	6.8%	2.9%	4.3%
	Poor	Count	0	3	3
		% within Immigrant Status	.0%	2.2%	1.4%
	Did Not Use	Count	13	32	45
		% within Immigrant Status	17.8%	23.4%	21.4%
Total		Count	73	137	210
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for friends rating and place of origin

			Immigrant		
			Yes	No	Total
Friends	Excellent	Count	16	26	42
		% within Immigrant Status	21.9%	19.0%	20.0%
	Very Good	Count	23	37	60
		% within Immigrant Status	31.5%	27.0%	28.6%
	Average	Count	19	38	57
		% within Immigrant Status	26.0%	27.7%	27.1%
	Below Average	Count	4	6	10
		% within Immigrant Status	5.5%	4.4%	4.8%
	Poor	Count	1	2	3
		% within Immigrant Status	1.4%	1.5%	1.4%
	Did Not Use	Count	10	28	38
		% within Immigrant Status	13.7%	20.4%	18.1%
Total		Count	73	137	210
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for athletic coach rating and place of origin

			Immigrant		
			Yes	No	Total
Athletic Coach	Excellent	Count	2	5	7
		% within Immigrant Status	2.7%	3.6%	3.3%
	Very Good	Count	4	8	12
		% within Immigrant Status	5.5%	5.8%	5.7%
	Average	Count	7	11	18
		% within Immigrant Status	9.6%	8.0%	8.6%
	Below Average	Count	3	1	4
		% within Immigrant Status	4.1%	.7%	1.9%
	Poor	Count	1	1	2
		% within Immigrant Status	1.4%	.7%	1.0%
	Did Not Use	Count	56	111	167
		% within Immigrant Status	76.7%	81.0%	79.5%
Total		Count	73	137	210
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for religious person rating and place of origin

			Immigrant		
			Yes	No	Total
Religious Person	Excellent	Count	5	6	11
		% within Immigrant Status	6.8%	4.4%	5.2%
	Very Good	Count	1	6	7
		% within Immigrant Status	1.4%	4.4%	3.3%
	Average	Count	6	7	13
		% within Immigrant Status	8.2%	5.1%	6.2%
	Below Average	Count	3	1	4
		% within Immigrant Status	4.1%	.7%	1.9%
	Poor	Count	1	1	2
		% within Immigrant Status	1.4%	.7%	1.0%
	Did Not Use	Count	57	116	173
		% within Immigrant Status	78.1%	84.7%	82.4%
Total		Count	73	137	210
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for others rating and place of origin

			Immigrant		
			Yes	No	Total
Others Not Mentioned	Excellent	Count	4	4	8
		% within Immigrant Status	5.5%	2.9%	3.8%
	Very Good	Count	4	6	10
		% within Immigrant Status	5.5%	4.4%	4.8%
	Average	Count	6	7	13
		% within Immigrant Status	8.2%	5.1%	6.2%
	Below Average	Count	2	1	3
		% within Immigrant Status	2.7%	.7%	1.4%
	Did Not Use	Count	57	119	176
		% within Immigrant Status	78.1%	86.9%	83.8%
Total		Count	73	137	210
		% within Immigrant Status	100.0%	100.0%	100.0%

APPENDIX N

CROSS-TABLULATIONS FOR VARIOUS CYBER- AND TRADITIONAL METHODS OF COMMUNICATION

Cross-tabulation for email use and student place of origin

			Immigrant		
			Yes	No	Total
Email	Used with someone	Count	75	103	178
		% within Immigrant Status	65.2%	55.1%	58.9%
	Did Not Use For Anyone	Count	40	84	124
		% within Immigrant Status	34.8%	44.9%	41.1%
	Total	Count	115	187	302
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for instant messaging (IM) use and student place of origin

			Immigrant		
			Yes	No	Total
IM	Used with someone	Count	74	123	197
		% within Immigrant Status	64.3%	65.8%	65.2%
	Did Not Use For Anyone	Count	41	64	105
		% within Immigrant Status	35.7%	34.2%	34.8%
	Total	Count	115	187	302
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for in-person use and student place of origin

			Immigrant		
			Yes	No	Total
IP	Used with someone	Count	101	181	282
		% within Immigrant Status	87.8%	96.8%	93.4%
	Did Not Use For Anyone	Count	14	6	20
		% within Immigrant Status	12.2%	3.2%	6.6%
	Total	Count	115	187	302
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for post/mail use and student place of origin

			Immigrant		
			Yes	No	Total
Post/ Mail	Used with someone	Count	30	40	70
		% within Immigrant Status	26.1%	21.4%	23.2%
	Did Not Use For Anyone	Count	85	147	232
		% within Immigrant Status	73.9%	78.6%	76.8%
	Total	Count	115	187	302
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for phone use and student place of origin

			Immigrant		
			Yes	No	Total
Phone	Used with someone	Count	79	128	207
		% within Immigrant Status	68.7%	68.4%	68.5%
	Did Not Use For Anyone	Count	36	59	95
		% within Immigrant Status	31.3%	31.6%	31.5%
	Total	Count	115	187	302
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for blog use and student place of origin

			Immigrant		
			Yes	No	Total
Blog	Used with someone	Count	18	20	38
		% within Immigrant Status	15.7%	10.7%	12.6%
	Did Not Use For Anyone	Count	97	167	264
		% within Immigrant Status	84.3%	89.3%	87.4%
	Total	Count	115	187	302
		% within Immigrant Status	100.0%	100.0%	100.0%

Cross-tabulation for on-line social networks use and student place of origin

			Immigrant		
			Yes	No	Total
On-line Social Network	Used with someone	Count	56	88	144
		% within Immigrant Status	48.7%	47.1%	47.7%
	Did Not Use For Anyone	Count	59	99	158
		% within Immigrant Status	51.3%	52.9%	52.3%
	Total	Count	115	187	302
		% within Immigrant Status	100.0%	100.0%	100.0%

APPENDIX O

CROSS-TABULATION FOR USE OF EMAIL AND COLLEGE WEB SITE IN RELATION TO COLLEGE OF ATTENDANCE, IMMIGRANT STATUS AND LOW INCOME SES

					New College of Attendance		
SES	Immigrant Status				two-year college	Various four-year colleges	Total
Lower class / $0 – $34,999	Yes	Students Email	Used	Count	6	22	28
				Expected Count	6.6	21.4	28.0
				% within Students Email	21.4%	78.6%	100.0%
				% within New College of Attendance	66.7%	75.9%	73.7%
				% of Total	15.8%	57.9%	73.7%
			Did Not Use	Count	3	7	10
				Expected Count	2.4	7.6	10.0
				% within Students Email	30.0%	70.0%	100.0%
				% within New College of Attendance	33.3%	24.1%	26.3%
				% of Total	7.9%	18.4%	26.3%
			Total	Count	9	29	38
				Expected Count	9.0	29.0	38.0
				% within Students Email	23.7%	76.3%	100.0%
				% within New College of Attendance	100.0%	100.0%	100.0%
				% of Total	23.7%	76.3%	100.0%

SES	Immigrant Status				New College of Attendance		
					two-year college	Various four-year colleges	Total
Lower class / $0 – $34,999	No	Students Email	Used	Count	9	10	19
				Expected Count	9.2	9.8	19.0
				% within Students Email	47.4%	52.6%	100.0%
				% within New College of Attendance	64.3%	66.7%	65.5%
				% of Total	31.0%	34.5%	65.5%
			Did Not Use	Count	5	5	10
				Expected Count	4.8	5.2	10.0
				% within Students Email	50.0%	50.0%	100.0%
				% within New College of Attendance	35.7%	33.3%	34.5%
				% of Total	17.2%	17.2%	34.5%
			Total	Count	14	15	29
				Expected Count	14.0	15.0	29.0
				% within Students Email	48.3%	51.7%	100.0%
				% within New College of Attendance	100.0%	100.0%	100.0%
				% of Total	48.3%	51.7%	100.0%

College Web site

SES	Immigrant Status				New College of Attendance: two-year college	New College of Attendance: Various four-year colleges	Total
Lower class / $0 – $34,999	Yes	College Web site	Used	Count	8	23	31
				Expected Count	7.3	23.7	31.0
				% within College Web site	25.8%	74.2%	100.0%
				% within New College of Attendance	88.9%	79.3%	81.6%
				% of Total	21.1%	60.5%	81.6%
			Did Not Use	Count	1	6	7
				Expected Count	1.7	5.3	7.0
				% within College Web site	14.3%	85.7%	100.0%
				% within New College of Attendance	11.1%	20.7%	18.4%
				% of Total	2.6%	15.8%	18.4%
			Total	Count	9	29	38
				Expected Count	9.0	29.0	38.0
				% within College Web site	23.7%	76.3%	100.0%
				% within New College of Attendance	100.0%	100.0%	100.0%
				% of Total	23.7%	76.3%	100.0%
	No	College Web site	Used	Count	11	12	23
				Expected Count	11.1	11.9	23.0
				% within College Web site	47.8%	52.2%	100.0%
				% within New College of Attendance	78.6%	80.0%	79.3%
				% of Total	37.9%	41.4%	79.3%
			Did Not Use	Count	3	3	6
				Expected Count	2.9	3.1	6.0
				% within College Web site	50.0%	50.0%	100.0%
				% within New College of Attendance	21.4%	20.0%	20.7%
				% of Total	10.3%	10.3%	20.7%
			Total	Count	14	15	29
				Expected Count	14.0	15.0	29.0
				% within College Web site	48.3%	51.7%	100.0%
				% within New College of Attendance	100.0%	100.0%	100.0%
				% of Total	48.3%	51.7%	100.0%

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